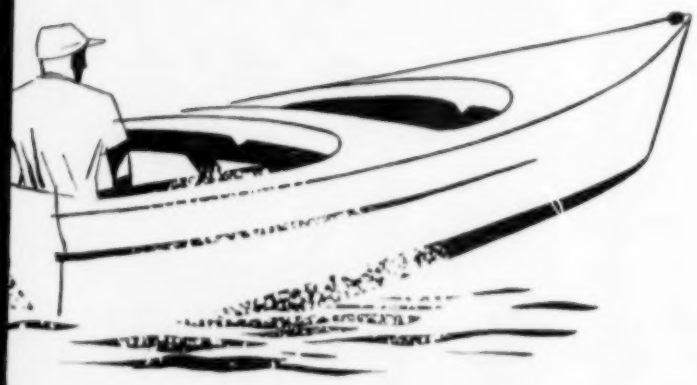
40 CENTS

Consumers' Research



COMPLETE CONTENTS ON INSIDE FRONT COVER

Consumers' Research Bulletin

MAY 1956 VOL. 37 • NO. 5

Consumers' Research functions to provide unbiased information on goods bought by ultimate consumers. For their benefit (not for business or industry) and solely with the funds they provide, CR carries on tests and research on a wide variety of goods, materials, and appliances, and publishes the findings in CR BULLETIN. Consumers' Research is a non-profit institution, and is organized and operates as a scientific, technical, and educational organization.

OFF THE EDITOR'S CHEST

"ALTHOUGH our refrigerator carries a 4-year warranty it cost me $30 to have the sealed-in refrigerating unit replaced when it went bad after a year and a half" reported a CR subscriber indignantly. He added that he understood most major manufacturers of large household appliances stood behind their warranty to the extent of paying for labor costs involved in replacement of defective units.

If the irate gentleman had read the warranty carefully when he first purchased that particular refrigerator or even before he bought it, he would have noted that it read: "This four year replacement contract [with respect to the hermetically sealed unit] does not. . .cover any. . . service required." In other words, only the unit itself would be supplied free of charge, not the labor required to take the old one out and install the new one. It is true that some manufacturers issue warranties that guarantee replacement of the refrigerating unit without any cost whatever to the purchaser either for the unit itself or the labor cost involved in replacing a defective unit within the period of the warranty. If that feature seems important to the purchaser, he should make a comparison of the warranties offered by the various makes, along with the desirable and undesirable features and performance factors of the several brands of appliances he is considering, before he makes a final decision.

The term "guarantee" or "warranty" by itself is meaningless. In fact, there are many promoters of near rackets or gyp products who deliberately use the term without defining it, to lure the unwary into buying something on which the purchaser will try in vain to get his money back when he discovers it does not live up to its glowing advertising claims. The Better Business Bureaus' Bulletins regularly carry warnings of cases where consumers have been taken in, to their sorrow, by this technique of claiming that a product is "guaranteed" when no actual warranty exists.

(Continued on page 22)

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It will be advantageous if you will, whenever possible, send prompt notice of change of address at least 5 weeks before it is to take effect, accompanying your notice with statement of your old address with name in full. At least a month's notice must be given in any case. ¶This rule, however, regarding long advance notice does not apply to military personnel. *CR will, of course, gladly change addresses for men and women in the services as often as required by changes in station and other circumstances.*

Symbols used to indicate sources of data and bases of ratings: AA—regarded as worthy of highest recommendation; A—recommended on basis of quality; B—intermediate with respect to quality; C—not recommended on basis of quality; cr—information from Consumers' Research's own tests or investigations; **1,2,3**—relative prices, 1 being low, 3 high. Note that price and quality are completely differentiated in CR's listings; **a quality judgment is independent of price;** 55, 56—year in which test was made or information obtained or organized by the staff of Consumers' Research.

The Consumers' Observation Post

THOSE SMALL PERSONAL RADIO SETS that operate with batteries are popular during the spring and summer at the seashore, picnics, on camping trips, and for other occasions when electric current is not conveniently available. Owners of these sets should bear in mind that it is essential to remove the batteries promptly when they go dead or when the set is to be out of service for an extended period. The owner of a little RCA Victor Super personal radio left it on her dressing table unused for several months and then discovered that a corrosive fluid had leaked out of the batteries, disfiguring the top of the table and putting the radio out of commission. One repairman refused to attempt to restore the radio to working order, saying that it was ruined. The estimate for putting it into shape by the official RCA repair center amounted to $13.94, plus shipping charges--about half the price for a new set, and more than half if the new set were purchased in a discount house.

* * *

SWEATERS OF NYLON AND ORLON sometimes acquire a fuzzy appearance with a number of little balls or pills on the surface that are somewhat unsightly. The abrasion or rubbing of the sweater against another garment, such as a coat, or under the arms where the sleeve brushes against the side of the sweater, is especially likely to cause pilling. These little balls can sometimes be straightened out if the sweater is gently stroked with a soft brush while it is still damp after being washed. The process must be repeated at frequent intervals, however, for the improvement in appearance is not permanent. In some cases, the pills may be clipped off with an electric shaver (rotary type, such as the Norelco) without damaging the sweater.

* * *

FLORIDA AND TEXAS ORANGES will still be dyed with the banned coal-tar dye FD&C Red 32. The U. S. Circuit Court of Appeals has granted the orange growers a stay of execution of the Food and Drug Administration's order which excluded the use of this color in foods and in drugs for internal use. The Food and Drug Administration has found that this particular color is not harmless for use in foods. Consumers should be careful not to get any of the dye into the juice when squeezing dyed oranges, marked "color added," and should make certain to use only undyed oranges in preparing marmalade, cake, and other foods that call for orange peel.

* * *

FOOD FREEZER PLANS which fell into disrepute several years back because of the extravagant promises made by salesmen and in the advertising of some sharp merchandisers have continued to find favor where handled by reputable merchants. Such plans usually include the purchase of a freezer and a supply of frozen food every four to six months. It is a good idea for the prospective purchaser to ponder carefully the answers to several questions discussed in a little leaflet entitled Are Home Freezers and Frozen Food Plans for You? by Ruth Hodgson, published by the New York State Home Extension Service. Do you, for example, really want a home freezer, or will the freezing compartment in your refrigerator serve your needs adequately? Can you save money on a frozen food plan? Do you know how much it will cost you to own and operate a home freezer? According to the figures supplied by the U. S. Department of Agriculture, the annual overhead cost of a home freezer may run to 26 cents per pound of food stored, exclusive of the price paid for the food itself. To offset the costs of owning and operating a freezer, you would need to save a considerable amount of money on each pound of food stored. Although the prices of frozen foods bought through a frozen food plan may be somewhat less than those purchased

at retail stores, the savings are not usually great enough to cover the overhead costs of owning and using a freezer, including operation (electricity), repairs, and depreciation. Another question to be answered is whether your family will be satisfied to live on frozen foods day in and day out. The freezer is, of course, a convenience, particularly in sections where it is difficult to get to market frequently, and frozen food saves time in meal preparation. It is well to bear in mind, however, that your initial investment will be in the neighborhood of $500 to $800, and it takes a lot of saving over a long period to make up that amount.

* * *

IF YOU HAVE PURCHASED A SECONDHAND CAR on which the odometer has been set back, you may be able to sue the dealer and collect damages. It is pointed out by Automotive News that the higher courts consistently hold that a car purchaser may sue and recover damages from a seller who fraudulently induced a contract of sale. The magazine cites the case of District Motor v. Rod, 88 Atl. (2nd) 489 where it was shown that a purchaser who bought a car with the odometer set back to 50 miles later found out about the misrepresentation. In subsequent litigation, the court ruled that the purchaser could recover all ordinary damages incurred, plus $400 additional as exemplary damages.

* * *

LADIES' HANDBAGS will soon be sold with a manufacturer's warranty, according to an announcement by the National Authority for the Ladies' Handbag Industry. The plan is to insert in each handbag made by the members of this particular trade association, whose members represent 60 percent of the nation's handbag manufacturers, a card informing the purchaser that she may return a handbag defective in materials or workmanship directly to the manufacturer for adjustment. She must also include 50 cents to cover the cost of handling, packing, and returning. If servicing is necessary for reasons other than defects covered by the warranty, there will be a charge. We hope that when the plan gets under way our subscribers will report to us how well their complaints are handled.

* * *

SHOULD YOU BUY AN OLD HOUSE OR A BRAND NEW ONE? U. S. News & World Report discusses the pros and cons. One advantage in buying an old house is that the initial cost is often less than for a new one, particularly when the cost of landscaping is taken into consideration. Community services are likely to be better in a well-established community than in a new subdivision, and taxes tend to rise less steeply. On the other hand, heavy repair bills may be called for to put an old house in top operating shape; an old neighborhood may be going down hill; and the cost of remodeling may be greater than the market value of the house if it is later put up for sale. The magazine advises an expert's appraisal of an old house before purchase.

* * *

THE WIDESPREAD USE OF ANTIBIOTICS and sulfonamides has been accompanied by an increased number of patients who are hypersensitive to these "miracle" drugs. According to the Journal of the American Medical Association, it is estimated that allergy to penicillin is now found in 10 percent of the population, and death from this cause is not uncommon. The danger to the hypersensitive is not only in the form of drugs prescribed by physicians, but the incorporation of such substances in nose drops, throat spray, and ointments, and the use of antibiotics in animal husbandry so that small amounts are found in meat, eggs, milk, cheese, and other foods. The door has also been opened recently by the Food and Drug Administration to the use of an antibiotic (Acronize) as a preservative for uncooked poultry on which the tolerance has been set at 7 ppm. of the antibiotic remaining in the uncooked poultry. Eventually it is expected to be used on beef and fish, also. The advantage claimed is that "shelf life" of poultry is lengthened by 5 to 7 days, reducing frequency of delivery required. Those who recognize fresh-killed poultry as a sign of quality will not regard this longer "shelf life" as an advantage.

(The continuation of this section is on page 33)

Men's Raincoats

WHAT KIND OF SERVICE do you look for in a raincoat? If the consumer wants a coat that will keep him dry in any kind of a storm, he needs a waterproof coat, one made of plastic film or rubberized or other coated fabric.

One disadvantage of completely waterproof coats is that they are hot and likely to leave the wearer damp from perspiration, especially in hot, humid weather.

Water-repellent coats are shower or rain resistant, but not waterproof. A water-repellent coat has a marked advantage over a waterproof coat in that it is not airtight and consequently perspiration and condensation do not accumulate within it. Water-repellent coats are available in a greater variety of finishes and fabrics than waterproof coats. In fact, most coats of the water-repellent kind can be used for dress or sportswear as well as for rainwear. These are the coats that were selected for test in this study.

Some raincoats are dual-purpose garments and can be worn as a topcoat or a raincoat. They are heavier than a raincoat and are tailored like a man's topcoat. A considerable number of hand operations are involved in making them, just as in making a topcoat. These operations increase the price of a coat and account in part for the wide price range. CR selected for test those makes that were most widely advertised over the country. Prices ranged from $13 to $30 for the raincoats, $18 to $50 for the topcoat-raincoat garments.

What to look for on the label

Can the consumer tell how waterproof a garment is likely to be? There is, unfortunately, no accepted nomenclature which will give him much information on this point. A raincoat is usually marked "water repellent" on its label or hang tag, or sometimes the label claims that the finish provides "showerproof protection." It is well known that there is considerable difference in the water repellency of fabrics, depending on the fiber and weave of the fabric itself, as well as the kind of finish given the fabric.

The industry has been well aware of this confusion, and for several years representatives of raincoat manufacturers have worked in committees with manufacturers of fabrics and retailers and consumer groups to develop classifications that might be meaningful to the men

Construction details help provide protection against the weather.

A collar that can be buttoned up closely around the neck will give more protection than a loose-fitting one like this.

Buttons should be set well back from the edge of the front to give an ample overlap. A flap of fabric over the buttonholes helps, too.

If you must sit outdoors in bad weather, a tab and button at the bottom of the front closure will help keep the coat closed.

A shallow yoke lining of treated water-repellent fabric gives added protection across the shoulders, where it is most needed.

A deep yoke lining affords more protection than a shallow yoke. Water-repellent treatment is necessary, however, for either type.

Try the coat on for size and for length. These three coats (one of plastic film) were all sized 38 long. Length depends on the style of the coat, in part.

For good appearance, stitching should be smooth and not puckered. In some cases, stitching perforations may impair water repellency.

Slashed-through pockets make it possible to reach through to the suit jacket or trousers without unbuttoning the raincoat.

and women who buy rainwear. Nomenclature for classifications that might be helpful was proposed some months ago by a committee working under the aegis of the American Standards Association. The suggested standards of performance are based on the rain test (35-52) developed by the American Association of Textile Chemists and Colorists. Briefly, the suggested classifications for the three types of rainwear and their performance are characterized as:

Suggested classifications	Head of water of standard spray	Time	Weight of water penetrating fabric, maximum permissible
shower resistant	2 ft.	1 min.	5 g.
rain resistant	2 ft.	5 min.	5 g.
heavy rain resistant	3 ft.	5 min.	1 g.

CR's test of raincoats

In CR's tests, the raincoats and the dual-purpose raincoats were tested and evaluated for rain resistance according to the standards described. The results were very interesting. On two coats, for example, the outer fabrics alone failed to pass the test for rain resistance. The coats had deep yoke linings of the same fabric, however, and the two fabrics used together passed the test easily. This combination would make a very satisfactory coat for the man who bought one, provided he were lucky enough to wear it only in showers that came straight down on the shoulders. The coats conceivably would not be practical in a driving rain since the wearer would not be adequately protected where there was only a single thickness of fabric.

In other coats, oddly enough, an outer fabric alone showed more resistance to rain than the outer fabric in conjunction with the lining fabric. In these cases, apparently the lining fabric was not treated, and acted as a wick.

CR also examined the coats for workmanship and found that workmanship was reasonably good on all the coats; there were no serious faults. The most common defect was somewhat ragged buttonholes.

What about cleaning?

How water-repellent will a coat be after washing and cleaning? The answer to this question depends almost entirely on how the washing and dry cleaning are done, particularly how well the garments are rinsed in the cleaning process. The National Institute of Drycleaning after careful study discovered that many fabrics, treated during manufacture with water-repellent finishes that were supposed to be permanent, were not water repellent after dry cleaning. The reason for this, the Institute concluded, is not that dry cleaning removes the finish, but that the detergents used in dry cleaning have a wetting action which counteracts the water-repellent effect of the finish. They found, further, that the usual rinsing did not remove the detergents.

One conclusion that the consumer might draw from the findings of this study is that when a raincoat is dry cleaned, it will need to be treated again by the dry cleaner with a water-repellent

"Now, approximately how dry did you wish to stay?"

AMERICAN LEGION MAGAZINE

finish if it is to be effective as rainwear. The charge for this treatment plus dry cleaning is likely to be around $2.50.

Washable coats are another matter. There are two kinds: wash-drip-dry-and-wear and wash-drip-dry-and-press. It is claimed that a little ironing will actually restore the water repellency in some cases, and it is a good idea to check the label on this point. One thing is sure, it is important that rinsing be carefully done, otherwise the detergent that remains in the coat is likely to mask the effect of the original water-repellent treatment, just as a detergent does that is used in a dry-cleaning process.

A. RECOMMENDED

Alligator, Superwon (The Alligator Co., 4153 Bingham Ave., St. Louis 16) $12.75.

Raincoat. Sample tested was gray. Rayon and cotton outer fabric with shallow yoke lining of the same fabric. Unlined sleeves. Had extra button at the bottom of back vent. ¶This coat was resistant to heavy rain and was the best coat tested in this respect.

Alligator, Platinum Label (The Alligator Co.) $49.75.

Topcoat-raincoat. Color, tan. All-wool worsted gabardine outer fabric; deep yoke and sleeve lining of rayon and acetate. ¶Rain resistant. First choice for appearance and finish in the topcoat-raincoat group, according to the personal preferences expressed by a panel of 7 men.

Alligator, Gold Label (The Alligator Co.) $40.75.

Topcoat-raincoat. Color, tan. All-wool worsted gabardine outer fabric; rayon and acetate deep yoke and sleeve lining. ¶Rain resistant.

B. INTERMEDIATE

Alligator, Travelweight (The Alligator Co.) $19.75.

Raincoat. Color, "Fog buff." Cotton outer fabric; rayon deep yoke and sleeve lining. Had button on back vent. ¶Outer fabric alone was resistant to heavy rain. Outer fabric and lining fabric together, however, were only rain resistant. Note that in this case the lining did not add to the water repellency of the coat but decreased it. This coat was the last choice of CR's preference panel in the raincoat group.

Plymouth, Thunderbird (Plymouth Mfg. Co., 500 Harrison Ave., Boston 18) $27.50.

Raincoat. Color, light tan. 50% Dacron, 50% Pima cotton poplin outer fabric; nylon deep yoke and sleeve lining. Had extra button at bottom of front closure and a button on the back vent. Labeled "Wash'N'Wear." ¶Rain resistant.

Rainfair, Cavalier (Rainfair Inc., Racine, Wis.) $18.50; $27.50 with all-wool zip-out lining.

Topcoat-raincoat. Color, taupe. Rayon gabardine outer fabric treated with silicone water-repellent finish; rayon and acetate deep yoke and sleeve lining. ¶Rain resistant.

Sears, Duralon (Sears-Roebuck's Cat. No. 45—U3970) $16.95, plus postage.

Topcoat-raincoat. Color, grayish tan. Rayon, acetate, Dacron, and nylon gabardine outer fabric treated with *Cravenette* water-repellent finish. Rayon deep yoke and sleeve lining. ¶Rain resistant. Last choice of CR's preference panel in the topcoat-raincoat group.

* * *

Rainfair, Forecaster (Rainfair, Inc.) $19.50.

Raincoat. Color, "fawn." *Sanforized* cotton outer fabric treated with *Zelan* water-repellent finish. Nylon deep yoke and sleeve lining. Labeled washable. ¶Shower resistant, but did not meet requirements for rain resistance.

C. NOT RECOMMENDED

London Fog (Londontown Mfg. Co., 5 N. Haven St., Baltimore 24) $29.75.

Raincoat. Color, light tan. 50% Dacron, 50% combed cotton "Calibre cloth" poplin outer fabric with deep yoke lining of the same fabric; nylon sleeve lining. Had extra button at bottom of front closure and a button on the back vent. Three extra buttons provided. Labeled "machine washable." ¶Did not meet requirements for rain resistance; slightly outside limit for shower resistance. Was the first choice for appearance and finish by CR's preference panel in the raincoat group.

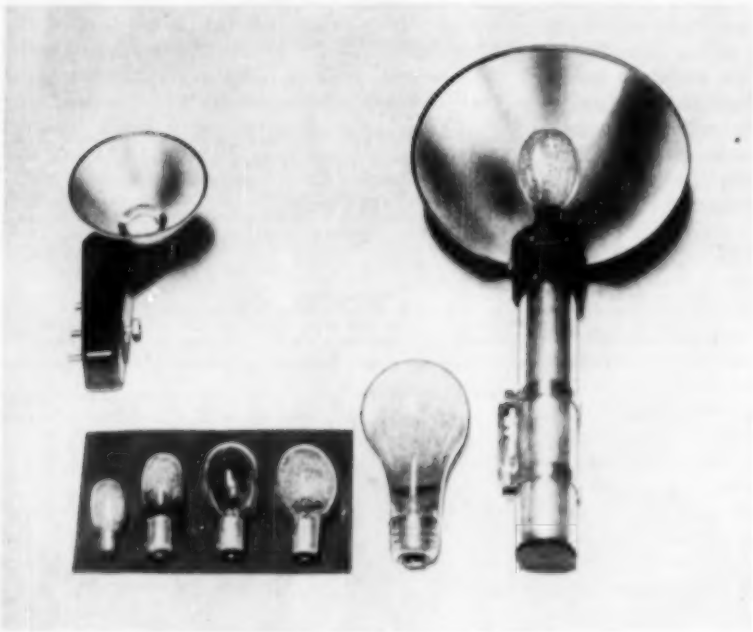
Plymouth, Medalist (Plymouth Mfg. Co.) $21.50.

Raincoat. Color, light tan. Cotton gabardine outer fabric; rayon and acetate yoke and cotton plaid lining. Had extra button at bottom of front closure and a button on the back vent. Outside pockets; no slashed-through pocket. ¶Did not meet requirements for rain resistance; slightly outside limit for shower resistance.

Sears, Fashion Tailored (Sears-Roebuck's Cat. No. 45—U3930) $19.75, plus postage.

Raincoat. Color, light tan. 50% Dacron, 50% combed cotton poplin treated with *Zelan* water-repellent finish. Nylon deep yoke and sleeve lining. Had extra button at bottom of front closure and a button on the back vent. Labeled "Wash'N'Wear." ¶Did not meet requirements for shower or rain resistance; was the poorest coat tested in this respect.

Flash synchronization and flash bulbs



Top left: Midget flashgun for M-2 bulbs.

Top right: Standard flashgun.

Bottom, left to right: M-2, No. 8, SM, No. 5, and No. 11 flash bulbs.

Beset by flash bulb numbers that have no relation to the bulbs' characteristics, with several of the makers identifying essentially the same bulb by different numbers, and with cameras having shutters with a variety of types of synchronization, it is not surprising that the consumer is bewildered in considering the problem of flash photography. This article is an attempt to throw some light on the basic and necessary aspects of a complicated and confusing situation and to help the consumer to select the best flash bulb for his camera and purpose.

IF the average photographer is perplexed by the large array of flash bulbs that are offered, and does not know which combination of bulb synchronization (F, M, or X) and shutter speed will serve his purpose best, it is not at all surprising. There are almost a hundred kinds and brands of flash bulbs on the market.

Cameras are fitted with various types or combinations of types of synchronization. These are (1) X; (2) F; (3) M; (4) F and M; (5) M and X; (6) F, M, and X; and (7) variable synchronization adjustable over the range from 0 to 25 milliseconds. Instructions for the use of flash bulbs that come with most cameras are inadequate. Moreover, salesmen in camera, drug, and stationery stores commonly will not have a good enough working knowledge of flash bulbs and their applications to be of much help to the consumer.

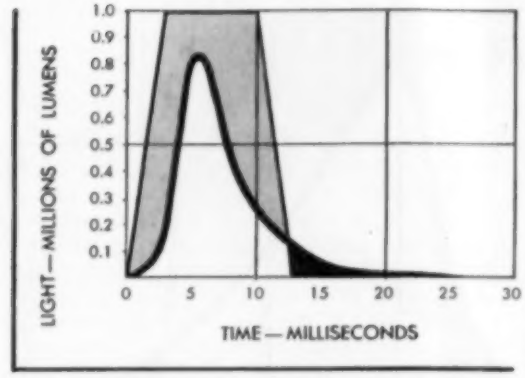
In order to use the light from a flash bulb effectively, the shutter of the camera must be wide open during the brief interval in which the flash is at its peak or maximum light intensity and the shutter speed must be such that the shutter remains open long enough to catch the greatest possible part of the total light output produced by the bulb.

In order to accomplish this, flash bulbs are made in four classes, and shutters have three main flash synchronization settings, as already mentioned, F, M, and X. When the shutter synchronization is set at *F*, for fast-peak bulbs, the shutter action is delayed so that the shutter is wide open about 3 to 5 thousandths of a second (3 to 5 milliseconds) after the flash contacts have closed. When the shutter is set at *M* for medium-peak bulbs, the opening of the shutter is delayed about 15 milliseconds, while at *X* synchronization for electronic flash and F and M bulbs, there is zero delay, and the flash occurs when the blades are fully open.

Cameras which do not have *adjustable* delay synchronization may have been set at the factory for F, M, or X delay. Which type you have can best be determined by referring to the instruction book for your camera, on any except the very simple cameras; with these, the maker will usually tell what bulb is to be used. Most between-the-lens shutters take about 3 thousandths of a second to open fully and about the same time to close. When set for 1/100 second, the shutter is fully or partly open for a total of about 14 milliseconds (1/70 second), and of this time the blades are *fully* open for about 8 milliseconds (1/125 second).

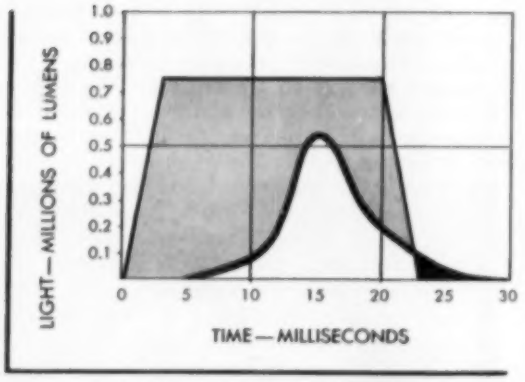
Flash bulb	Type of lamp	Approximate total light output, lumen-seconds	Approximate time from contact closure to peak illumination, milliseconds	Approximate duration of flash at half peak,* milliseconds	Synchronization setting	Shutter speeds
SM	Fast Peak	5,000	6	5	F	1/200 or slower
SF					X	1/50 or slower
M-2 (most makes)	Med. Peak	4,200 to 5,000	15	7.5-9.0	F or X M	1/50 or slower 1/25
PowerMite M-2 (GE)	Med. Peak	7,000	15	n.a.	F or X M	1/50 or slower 1/25
†PowerMite M-2B (GE)	Med. Peak	5,500	15	n.a.	F or X M	1/50 or slower 1/25
M-2 of Westinghouse mfrc.	Med. Peak	5,200	18	7.5	M	1/200 or slower
8		8,000	20	10.0		
5, 25		20,000	20	14		
†5B, 25B	Med. Peak	8,000	20	14	F or X	1/25
11, 40		30,000	20	17	M	1/500 or slower
†11B, 40B		14,000	20	17		
6, 26	Focal Plane	16,000	20	24	Focal Plane	any speed
31, 2A	" "	77,000	20	64	Focal Plane	any speed
Electronic	—	Variable	0	—	X	any speed

† Blue-colored bulbs; all others listed are clear bulbs. n.a.—information not available.
* This gives an indication of the action-stopping quality of the flash bulb. For example, a No. 5 (or 25) with a flash duration of 14 milliseconds would give an exposure of about 1/75 second even though the shutter was set at a slower speed, provided the other light on the scene were at a low level.



SM or SF Bulb; F Delay; Shutter 1/100

With F synchronization the shutter opens in 3 to 5 milliseconds and practically all of the light from an SM or SF fast-peak bulb is caught with a shutter speed of 1/100 second or any slower speed.



M-2 Bulb; F Delay; Shutter 1/50

At 1/50 second, most of the light from an M-2 bulb is caught when F synchronization is used. M-2 bulbs are best used at 1/25 second with X synchronization. (The Westinghouse M-2 has a longer delay before firing than other makes of M-2's and can thus be used with M synchronization at shutter speeds up to 1/200 second.)

The three kinds of bulbs—classified according to "delay"

1. Class F are fast-peak bulbs, and they are sold as SM or SF bulbs, usually at 14 cents each. They start to flash at almost the instant the shutter is operated and emit useful light for about 5 milliseconds (1/200 second), stopping action as a rather fast shutter speed does. These bulbs can be used with F or X synchronization at shutter speeds up to 1/50, or with F synchronization at higher speeds. They cannot be used with Class M synchronization. SM and SF bulbs have a light output of around 5000 lumen-seconds*. They are primarily designed for "open flash," or close-up work, and for box and other simple cameras with F synchronization.

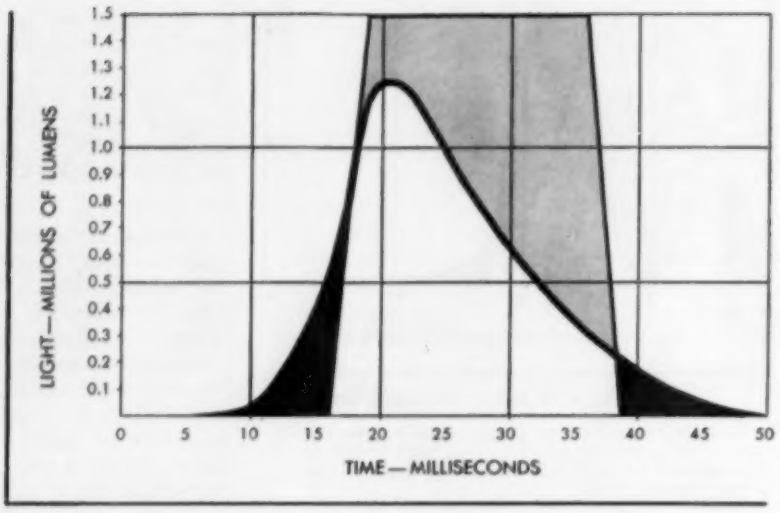
2. Class M are medium-peak bulbs and include No. 8 (11 cents), 5 or 25 (12 cents), 11 or 40 (17 cents), 22 or 2 (19 cents), and 0 (17 cents). Class M bulbs do not reach their maximum brilliance until about 20 milliseconds (1/50 second) after being fired; they emit useful light for about 14 milliseconds.

No. 5 (also known as No. 25) is the most popular Class M bulb. It gives ample light for black-and-white film or for color. No. 5 (or 25) bulbs have the disadvantage of being too large to permit any considerable number to be carried conveniently in the pocket. Moreover, when these No. 5's were used with the simpler cameras, they gave too much light†, with the result that a very large proportion of flash shots made with them were overexposed, producing poor "washed-out" picture quality.

The M-2 bulb was developed to solve the problem of too much light. This midget bulb (1¾ inches long overall, by ¾ inch diameter) is small enough that a sleeve containing 12 M-2's will fit into a shirt pocket. The total light output of the small bulb is about one quarter that of a No. 5 or 25, but is sufficient for good exposures under average snapshot conditions, with any type of camera. Unfortunately, most M-2 bulbs (*Westinghouse* is an exception), in spite of the designation, do not work to best advantage with M synchronization and should be used with F or X synchronization at 1/50 or slower. (Bulb manufacturers have really made it tough for the amateur photographer who won't do his homework and doesn't carry a data book or this article with him.) M-2 bulbs can be used with M synchronization, but there is a considerable loss of light when this is done. The *Westinghouse M-2*, on the other hand, is a true medium-peak bulb and can be used with M

*The light output of a flash bulb is usually given in lumen-seconds (obtained by multiplying the average intensity of the light—which is not constant but constantly varying—measured in lumens, by the duration of the flash in seconds).

†With *Plus X* film, for example, having a guide number of 150, a No. 5 lamp at 1/25 second, a picture taken at 7 feet would require that the lens be stopped down to *f*/22 (150/7); otherwise the film would be overexposed. The same film with an M-2 bulb would have a guide number of 80, requiring a lens stop of *f*/11 (80/7) at 7 feet. As *f*/11 is the smallest and often the only stop on most simple cameras, the M-2 would give about the right amount of light for a properly exposed picture.



5 or 25 Bulb; M Delay; Shutter 1/50

With M synchronization, in which the opening of the shutter is delayed about 15 milliseconds, the major part of the light from a No. 5 or 25 medium-peak bulb is caught with a shutter speed of 1/50 second or any slower speed.

synchronization at shutter speeds of 1/200 second and slower. (Eastman Kodak Co. claims that in their *Super M* flash holder the M-2 delivers as much light as a No. 5 or No. 25 and as much light as an SM or SF in a 5-inch reflector.)

3. Class S are slow-peak bulbs (No. 3 or 50, 24 cents each) and take about 30 milliseconds to reach their peak; the duration of the flash is about 17 milliseconds. They provide considerable total light in lumen-seconds, about five times as much as a No. 5. These slow-peak bulbs are designed for lighting fairly large areas. General Electric have recently brought out a new *M-2* bulb called the *PowerMite*, available in both clear and blue bulbs. They are only slightly larger than the old *M-2*, but a new method of filling with oxygen appreciably increases their light output. The clear *PowerMite M-2* produces 67 percent more light and the blue *PowerMite M-2B* 30 percent more light than the old *GE M-2* clear bulb.

Class FP (focal plane) bulbs have a long flash duration (about 24 to 64 milliseconds), depending on the size of the bulb. They have a long, fairly level peak, starting in about 20 milliseconds. No. 6 or 26 (15 cents) are used for small cameras; No. 31, also called 2A (26 cents), for large cameras.

Flash bulbs with focal-plane shutters

Focal-plane shutters operate in an entirely different way. At the faster speeds, the exposure is governed by the width of a slit in the shutter curtain, and the exposure is made as this slit travels across the film. For example, on a 35 mm. camera with the focal-plane shutter set for 1/1000 second (1 millisecond), it takes about 22 milliseconds for the slit in the shutter curtain (the width of which is varied according to the exposure setting) to travel across the film to expose each point on the film for 1/1000 second. Thus the flash bulb must provide a nearly constant light output for the whole of the 22 milliseconds. This is accomplished by FP (focal plane) flash bulbs, which have a long burning time. At slow speeds (1/25 second) and on some focal-plane cameras at 1/50 second, the shutter slit is as wide as the film area is long. With such a shutter, Class F or Class M bulbs can be used at 1/25 and 1/50 second.

Clear glass flash bulbs produce light more reddish than daylight and more bluish than that from photofloods. For some color films, this difference must be compensated for, either by placing a suitable filter on the lens or by using flash bulbs with a color coating on the glass. For some daylight color films, blue bulbs are used. (The same results can be achieved by using clear flash bulbs with a blue shield over the reflector.) The new indoor color (positive) film —Class F, *Kodachrome* or *Ektachrome*—is to be used with *clear* flash bulbs, but *Ektachrome Daylight* type requires blue bulbs. Amber bulbs, which produce a light similar to that from photofloods, can be used with some indoor color film.

For complete safety, a plastic shield should be used in front of the flash bulb to guard against flying glass in the event of an explosion, which happens occasionally.

Floor Polishers

MOTOR-OPERATED floor polishers have been on the market for many years, but for one reason or another they have received something less than overwhelming acceptance. The vast majority of homes have a refrigerator, radio, vacuum cleaner, and washing machine, but only a small percentage have electric floor polishers. However, interest in floor polishers is increasing, due in part to the large amount of advertising, and about 375,000 of these appliances were sold in 1955.†

The wide use of self-polishing floor waxes undoubtedly has hindered sales of floor polishers. These waxes are the recommended type for the currently popular asphalt and rubber tiles. They dry to a reasonably glossy finish which many housewives consider satisfactory. However, floor polishers of the type tested by CR are becoming popular even in homes where the self-polishing wax is used, as they can be used to buff the self-polishing waxes to a higher gloss, and to scrub floors as well. Furthermore, accessory kits available for some models enable the user to shampoo rugs and do light sanding and smoothing with steel wool on wood floors.

Wax that is applied to the floor and then finished off with a polishing operation is recommended for most kinds of smooth floor coverings. Such waxes are commonly pastes, but are also sold as liquids. Wax that requires polishing gives better protection, and lasts longer than the self-polishing type. With a polishing machine, the work in applying paste wax, polishing, and buffing is greatly reduced.

CR has tested eight floor polishers; our study included their use in scrubbing, waxing, polishing, and buffing, and practical use tests in homes. Electrical safety tests were made also under laboratory conditions.

To prevent excessive splashing, only a small amount of detergent solution should be used for scrubbing.

Scrubbing

All of the machines were found capable of doing a satisfactory job of scrubbing. The polishers can save a lot of work in scrubbing floors, but rinsing is necessary to remove soap and loosened dirt, and this must be done by hand. In CR's test, a strong solution of *Tide* in warm water was used. The user must be very careful to put *only a small amount of liquid* on the floor, in order to prevent splashing of baseboards and to avoid the danger of getting the solution into the wiring and electrical parts of the machine.

The machines (except the *Johnson*) had the working parts well protected on the underside. The *Johnson* had exposed wires and an opening on the bottom for circulating cooling air through the motor, and therefore is considered less desirable for scrubbing, from a safety standpoint, than the other machines tested. However, in CR's scrubbing tests, no water got into the mechanism or wiring of the *Johnson* in normal operation. The designers of the *Hoover* took extra precautions to hold the electrical shock hazard to a minimum. The *Hoover* has a well shielded underside and a handle which is insulated from the mechanism of the machine, and the directions specifically (and wisely) direct the user to remove the plug from the electric outlet before he takes off the brushes after the machine has been used for scrubbing.

One safety feature that is of vital importance on any portable electric appliance that may present a shock hazard was missing from all the polishers tested—a three-wire power cord and

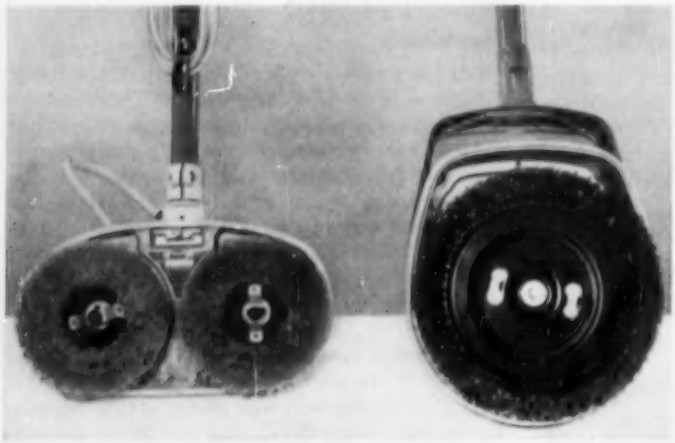
†Sales figure from Electrical Merchandising, a trade publication.

three-prong plug. When such a plug is properly connected to an electrical ground, either through a three-slot receptacle with a ground at one slot (see CR BULLETIN, March 1955), or through an adapter plug now available, the danger of receiving a shock is very greatly reduced. Appliance users must bear in mind that shock hazard is always a far more serious threat with an electrical appliance used with or near water on a wet surface or where water or plumbing, radiators, drainpipes, or metal lamp stands are within reach.

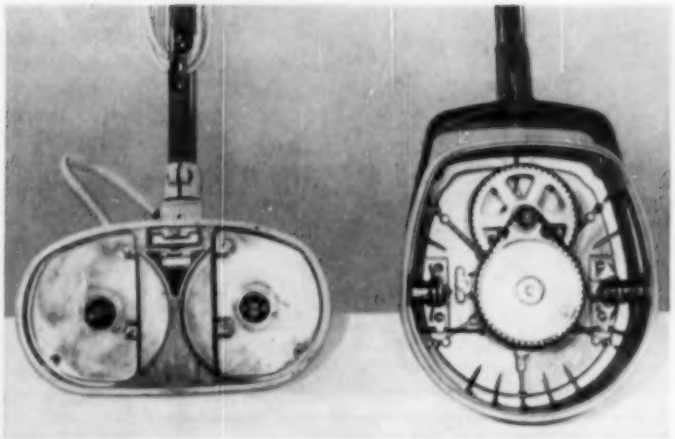
Waxing

The instructions for the twin-brush polishers recommended two different methods for using the machines to apply paste wax. (The instructions for the *Shetland* and the single-brush *Johnson* implied that the wax should be spread by hand or by means of a hand applicator.) The wax could be spread directly on the brushes, or on fine steel-wool pads placed on the brushes. If the wax is spread directly on the brushes, the brushes require washing after the floor has been waxed. Applying wax to the steel-wool pads keeps the brushes clean, but adds to the cost of waxing, since two new pads would be needed for each application.

Most of the machines had one set of brushes to be used both for scrubbing and for applying wax. Of course, the brushes should be dry when used to apply wax. In the use tests, the brushes required a long time, a half a day or more, to dry after the scrubbing operation. Many housewives would rather buy an extra set of brushes (at about $5) than have to wait for the scrubbing brushes to dry each time they are used.



The twin-brush machines have two small brushes that rotate in opposite directions. The Johnson uses one large brush.



The twin-brush machines, one of which is shown on the left, were shielded on the bottom to keep foreign material out of the mechanism. The Johnson, shown on the right, was not so well protected at the bottom.

Polishing

All the twin-brush machines produced a good gloss in the polishing tests. The differences in gloss produced by the different twin-brush machines were measurable under laboratory conditions, but were not great enough to be apparent to the eye. The single-brush *Johnson* was about equal to the twin-brush machines in polishing results. The polishing attachment for the *Kirby* vacuum cleaner did not give results quite as good as the machines made specially for floor polishing (see listing).

Buffing

Buffing pads were supplied for all the regular polishing machines, but not for the *Kirby* attachment. The pads with the *General* were made of lamb's wool; the pads for the other twin-brush machines were made of felt. The pads for all the twin-brush machines had snaps to hold them in place on the polishing brushes. A chenille pad came with the *Johnson*. This pad was not to be attached to a brush, but was laid on the floor, and the machine, with polishing brush in place, was set on the pad. The felt pads required a little care when they were snapped into place. When new, they had to be patted until they were flat against the brushes, for any folds or wrinkles in the pads caused the machines to vibrate when buffing. This vibration was especially noticeable with the lightweight *Shetland*.

Buffing, after polishing, did improve the gloss of polishing-type wax in all of CR's tests, but the increase in actual "shine" was not always noticeable to the eye. Perhaps for most homemakers, the difference would not be enough to warrant the extra labor and time required.

Which one should I buy?

If only the final results of the use of a polisher are considered, as to the quality of the polish produced, the *Johnson* and the *Regina* were best (by a small, probably insignificant margin). However, some other important factors must be considered. Some of the women preferred to use the *Shetland* because it was light in weight and easy to maneuver. On the other hand, the *Hoover* was judged somewhat *safer* than others (from the standpoint of electrical hazard) for scrubbing, especially on concrete floors, where shock hazard is particularly a problem with any electric appliance.

In the following listings, the machines rated *A. Recommended* are considered to be generally good in all respects and about equal to each other. The machines rated *A–* were about equal to those in the *A-Recommended* group except for some minor detail or details causing inconvenience or annoyance.

All the machines passed CR's tests for electrical safety, were listed by Underwriters' Laboratories, and operated on 110-120 volts a.c. or d.c. All the twin-brush machines polished a path about 12 inches wide and polished to within ¼ inch from a wall and 1 inch from a corner. With some machines, the TV interference varied, depending upon the channel being received.

The ratings that follow do not apply if the machines are to be used for scrubbing. There is an inherent increase in the possible electrical hazard when an ungrounded portable appliance is used for scrubbing, and the danger would be great where the floor covering is on concrete, directly in contact with the ground. It would be the part of wisdom never to use an electrical appliance in the home to scrub a concrete, terrazo, slate, flagstone, or tile floor.

A. Recommended

General, Model T-12A (General Floorcraft, Inc., New York 14) $79.50, plus tax, including two waxing brushes, two polishing brushes, and two lamb's wool buffing pads; scrubbing brushes, $5.50 per pair.
Description: A twin-brush machine. Weight, 15 lb. Cord length, 18 ft. Rated input, 320-380 watts. Has latch to hold handle in vertical position for storage.
Performance in test: Effectiveness in scrubbing, polishing, and buffing, good. The machine was easily controlled with one hand. There was an excessive amount of radio interference. Television interference was moderate.

Regina, Model TS (The Regina Corp., Rahway, N.J.) $66, including one pair of brushes for waxing or scrubbing, one pair of brushes for polishing, and one pair of felt pads for buffing.
Description: A twin-brush machine. Weight, 16½ lb. Cord length, 18 ft. Rated input, 400 watts. Has latch to hold handle in vertical position for storage.
Performance in test: Effectiveness in scrubbing, polishing, and buffing floors, good. The machine was easily controlled with one hand. Radio interference, moderate. Television interference, none to moderate.

Westinghouse, Model FP-3 (Westinghouse Electric Corp., Springfield, Mass.) $69.95, including one pair of brushes for waxing or scrubbing, one pair for polishing, and one pair of felt pads for buffing.
Description: A twin-brush machine. Weight, 16½ lb. Cord length, 18 ft. Rated input, 400 watts. Has latch to hold handle in vertical position for storage.
Performance in test: Effectiveness in scrubbing, polishing, and buffing floors, good. The machine was easily controlled with one hand. Radio interference, moderate. Television interference, none to excessive.
¶Similar to *Regina* except for shape of motor housing.

A-

Hoover, Model 0215 (The Hoover Co., North Canton, Ohio; made by a Hoover factory in England) $69.95, plus tax, including one pair of brushes for waxing or scrubbing, one pair for polishing, and one pair of felt pads for buffing.
Description: A twin-brush machine. Weight, 13 lb. Cord length, 19½ ft. Rated input, 400 watts. Has latch to hold handle in vertical position for storage.
Performance in test: Effectiveness in scrubbing, polishing, and buffing floors, good. The machine was easily controlled with one hand. Foot-operated on-off switch was considered less desirable than an on-off switch at the usual convenient location on the handle. Radio interference, moderate. Television interference, none to moderate.

Shetland, Model TA-15 (The Shetland Co., Inc., Lynn, Mass.) $49.95, including one pair of brushes for polishing; brushes for scrubbing, $4.50 per pair; felt pads for buffing, 75c per pair.
Description: A twin-brush machine. Weight, 9½ lb. Cord length, 17¾ ft. Rated input, 1.5 amp. Has a latch to hold the handle in the vertical position for convenient storage.
Performance in test: Effectiveness in scrubbing, polishing, and buffing floors, good. *Shetland* did not spread paste wax (applied to the brushes) as well as the other twin-brush machines, probably because of its light weight, but its lightness feature made some users prefer it to other makes. The machine was easily controlled with one hand. The latching device did not hold handle securely in the vertical position (for storage), as intended. Radio interference, excessive. Television interference, moderate to excessive.

Universal, Model 8730 (Landers, Frary & Clark, New Britain, Conn.) $69.95, including one pair of brushes for waxing or scrubbing, one pair for polishing, and one pair of felt pads for buffing.
Description: A twin-brush machine. Weight, 16¼ lb. Cord length, 22 ft. Rated input, 400 watts. Has latch to hold handle in vertical position for storage.
Performance in test: Effectiveness in scrubbing, polishing, and buffing floors, good. The machine was easily controlled with one hand. The latch holding the handle in the vertical position was hard to disengage. Radio interference, slight. Television interference, none to slight.
¶Similar to the *Regina* except for design of the handle and the shape of the motor housing.

B. Intermediate

Johnson, Model HP-54 (S. C. Johnson & Son, Inc., Racine, Wis.) $69.50, including one scrubbing brush, one polishing brush, and one buffing pad.
Description: A one-brush machine. Weight, 10¾ lb. Cord length, 23 ft. Rated input, 150 watts. Has friction device to hold the handle in the vertical position for storage. Safety switch prevents machine from starting when handle is vertical (a good feature; if the handle is vertical, the machine will not accidentally start when the cord is plugged into an outlet). Polishes a path 8½ in. wide.
Performance in test: Effectiveness in scrubbing, polishing, and buffing, good. Brush polished within ¼ in. from a wall, 2 in. from a corner. This machine was more difficult to control and steer than the twin-brush machines, and required use of two hands under some conditions. Radio interference, excessive. Television interference, none to excessive.

Floor Polisher Attachment for Kirby Vacuum Cleaner. This polisher is one of a large number of accessories regularly supplied with the *Kirby Model 514* upright vacuum cleaner. The *Kirby* had already been tested as a vacuum cleaner, and received an *A-Recommended* rating (see January 1955 CR BULLETIN).
Description: The attachment, with one roller-type brush, fits on front of the *Kirby* cleaner, and is intended to be used for polishing only (not for scrubbing). Vacuum cleaner weighs 15½ lb. with attachment in place. Cord length, 19¼ ft. Rated input, 4 amp. Has spring to hold handle in vertical position. Polishes a path 12 in. wide with a 1½ in. gap in the center of the path.
Performance in test: Effectiveness in polishing, fairly good. Brush reached within ¾ in. from wall, 1 in. from a corner. The *Kirby* was more difficult to control than the twin-brush polishers. It was noticeably noisier than other polishing machines tested. Radio interference, moderate. Television interference, none to moderate.

Corrections and Emendations to Consumers' Research Monthly Bulletins

Electric Shavers
Page 7, Col. 2
Jan. '56 Bulletin

With reference to the statement that the *Ronson* electric shaver cannot be used in an automobile with conversion devices, such as the *Kar-Shave*, Consumers' Research has been advised by the maker of *Kar-Shave* (Shavex Co., Los Angeles 39) that all *Kar-Shaves* now sold for operation on either a 6- or 12-volt car battery have a 110-volt a-c output and are usable with any electric shaver, including the *Ronson*.

Automatic Washing Machines
Pages 9, 11, 12
Oct. '55 Bulletin

Kenmore Cycla-Fabric Model 110. 553590. Change rating from *B. Intermediate* to *A. Recommended*. The higher rating is adopted because the manufacturer of this machine has presented satisfactory evidence which indicated leakage current values substantially lower on later production of the model than earlier sample tested by CR.

Penn Yan Standard Cartop WXH

Small pleasure boats

A REPORT FOR THE NOVICE BUYER

There are many families who, because of increased income or leisure or easy access to water, have given serious consideration to buying some sort of boat. Americans spent over $240 million last year on boats, motors, and marine equipment. The boom in the boating industry during the last ten years has far outstripped the general rise in the level of American business.

This article is intended as a guide for those who have yet to buy their first boat and are unfamiliar with the problems involved.

BEFORE the boom started, most boats were built individually. Now, for the most part, they are mass-produced, using materials, new in application to boats, such as aluminum, plywood, and fiber glass. These lend themselves well to production techniques but can have special disadvantages in actual use. Linked with these new materials and the expanded market is a new tone in the advertising used by some boat producers that seems particularly flamboyant in an industry formerly noted for conservatism and accuracy of statement.

Distribution is still a problem. Dealerships go to department stores and gas stations as well as to sporting goods stores, and they turn over rapidly. Many dealers, not long identified with the boating industry, lack enough specialized knowledge of boats to help the inexperienced buyer in making a sound choice.

Manufacturers themselves are not universally reliable. Boat manufacturing requires relatively little capital, no more than is necessary to rent a garage and buy a bandsaw, some plywood, some hardware, and some attractive labels. As a

result, a great many new manufacturers have gone into business to capture a share of the still-growing market, and the consumer is confronted with a choice among literally hundreds of builders and thousands of models, many of them with a very short history and ranging in quality from excellent to shoddy.

The inexperienced buyer may very likely buy a poorly constructed boat, or one that is unsuited to his needs. Since needs are highly individual, and since they influence the choice of hull type, weight, and construction materials, the problem of selection becomes too complex to be reduced to a list of recommended, intermediate, and not-recommended boats. Instead, the buyer should try to decide how and where he will use his boat, and he will do well as a rule to make his choice in the light of the following discussion.

What will the boat be used for?

Although the prospective buyer may plan to use his boat in a number of ways, he generally has a single primary use in mind, and, as a rule, he will do best to buy a boat specifically designed for this use. Among the primary uses are (1) fishing, (2) aquaplaning and water skiing, and (3) the mere pleasure of getting out on the water —for picnicking, exploring the shoreline, making camping trips, or simply riding around. Although some hulls will serve all these purposes adequately, there is no such thing as a thoroughly satisfactory all-purpose hull. Each kind of use requires certain hull characteristics, and buying a boat for a specific primary purpose will usually prove more satisfactory than getting something that is a compromise.

The *fishing boat* should be stable, wide-beamed, and durable. Stability is important when playing game fish, and when casting. Capacity should be sufficient to accommodate fishing gear, lunch boxes, bait buckets, and guests. The boat should have no center deck, and so permit reasonably free movement from one end of the boat to the other. It is important to remember that *the number of thwarts or seats does not indicate passenger capacity.* In small outboard hulls, thwarts are often installed to provide structural strength rather than for seating, and a hull with three thwarts may be dangerously overcrowded by three adults.

Durability is important, because the fishing hull is subject to considerable abrasion on the outside from submerged rocks, shallow bottoms, and frequent beachings. On the inside, a certain amount of dead bait, sand, and other debris is unavoidable and will quickly damage an unsuitable finish.

Speed is a factor in the fishing hull, to shorten the time of getting to and returning from fishing spots, but a good fishing boat should also be maneuverable at slow, trolling speeds. The most practical fishing hull is from 12 to 16 feet long, and is powered by an outboard motor of 3 to 15 horsepower. Inboard boats are less desirable because of the space wasted by the motor, the greater likelihood of damage to the propeller, and the greater danger of fire.

The *water-skiing* or *aquaplaning hull* must achieve a speed of over 15 miles per hour and should be capable of 20 to 25 miles per hour. High speeds can be attained only by a *planing* hull—that is, a hull which, under thrust of the motor, rises to the very surface of the water and moves along the surface with only a small area of the bottom actually in contact with the water. The planing hull is usually V-bottomed forward, flat-bottomed aft, and quite shallow throughout. A forward deck and often a midship deck provide structural strength but reduce passenger capacity sharply. Thoroughly efficient for its special purpose, it is obviously unsuited to fishing or general family use.

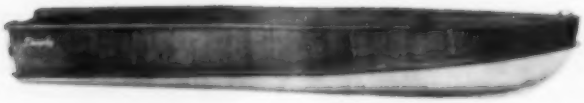
Since the high-speed hull carries few passengers and is not likely to be used in shallow water or off beaches, its finish need not be so rugged as that of the fishing boat. Molded plywood is a good material because it lends itself to refined hydrodynamic treatment and because its finish is not likely to be marred in use. The high-speed hull can be of inboard design, but the mass production of high-horsepower outboards makes the outboard hull just as efficient, and considerably more economical.

Pleasure boats

The hull that is bought for the mere fun of being on the water can range in size from 8 to 16 feet (a larger hull is not recommended as a first boat), and in type from canoe or rowboat through outboard hull to sailing craft. Here a choice depends largely upon size of family, local waterways, personal taste, and previous boating experience. For family picnicking, swimming parties, and general shoreline use, a type of outboard hull known as the *Amesbury Skiff* has proved thoroughly satisfactory for its capacity, seaworthiness, and maneuverability under outboard motor or oars. It is generally available in lapstreak (woodlap) construction in sizes from 12 to 18 feet, but similar models are now being produced in other materials.

A canoe can offer a wide variety of fun on the water, for one or two adults. Its speed and portability and its shallow draft make it especially suitable for camping trips. For children, an

Dunphy Trout



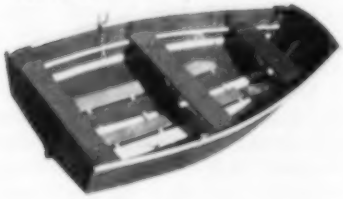
Lone Star Commander

Duratech Pramline 93

Cape Cod Stormy Petre

Penn Yan Swift CTT

Rye Pram



Thompson Sea Skiff

8-foot plywood "pram," produced by a number of manufacturers and available also in kit form, is suitable for use with oars or with outboard motors of not more than 3 horsepower. Its use is, of course, restricted to sheltered waters, and even there it presents serious risks for careless or inexperienced persons who will not adapt themselves to its very limited stability. For the more adventurous experienced person, a catboat or sloop with sails can provide what many consider the ultimate in water sport.

Portability

Most of the hull types discussed above are available in several materials and sizes, offering various degrees of portability. A high degree of portability may not seem important to a buyer who has already made his vacation plans for the next year or two, but actually it offers him opportunities to double or triple the use he gets out of his boat. With a hull that can be carried on a car-top rack or a light trailer, the owner can extend his boating to any river or lake reachable by car, and can use the boat on spring and fall week ends, on fresh- and salt-water fishing expeditions, and on all sorts of waterways other than the "summer lake" for which he originally bought it. The portable hull generally has lower depreciation and more potential buyers than the non-portable one.

Hulls weighing up to 85 pounds are easily portable on car-top racks provided that the owner can rely on a helper for loading and unloading. (Actually, the rack can carry two or three times this weight safely, but loading and unloading become difficult.) Transporting a boat properly secured on the top of an automobile has little effect on the speed or maneuverability of the car. A hull weighing over 85 pounds requires a trailer, and, although trailing a boat requires no special driving skill, the trailer involves an additional investment and may present an additional storage problem—especially for city dwellers. The weight of the trailer-transported boat is limited only by the rated capacity of the trailer, but a weight of more than 200 pounds is not recommended unless the owner can depend on the use of a launching ramp or a launching derrick wherever he goes. Such facilities are becoming increasingly common, but they are by no means universal.

The portable boat must be constructed of materials that do not depend upon immersion for watertightness. The wood planked hull, which does not become watertight until it has soaked for 48 hours, is not good as a transportable boat, because it will dry out and leak. Plywood hulls that are glued and screwed, and hulls made of aluminum, molded plywood, spun glass, and canvas on wood, do remain tight at all times.

Materials

With the increase in the small-boat market, a number of new materials have been developed. Some of these provide special advantages in fabrication; others offer the owner advantages in reduced maintenance or increased durability. Some of these materials have not been in use long enough to have proved the claims made for them; the merit of others seems to depend more upon the care and skill of the manufacturer than upon inherent qualities. The following description of general characteristics should serve as a guide to the buyer.

Aluminum. Its light weight (its greatest advantage) makes it ideal for car-top transportation. It requires no maintenance except retouching of the paint (for this reason unpainted models are to be preferred). It can stand neglect and abuse that would destroy other materials. It is not adapted to salt-water use, because it will corrode in salt water, and it is noisy (a disadvantage in hunting) and unpleasant to the touch. Although more or less punctureproof, it will dent on a moderate impact; dents cannot easily be repaired because the metal will have stretched. The owner cannot change the seating arrangement, install lockers, or make other modifications, as he might with a wooden hull. Flotation chambers are necessary to provide buoyancy, but in some models they do not provide sufficient buoyancy to permit bailing after a swamping or a capsizal. The stability of some models is not good.

Sheet plywood. Because this material lends itself well to mass production, it is most generally found in popular, low-priced models. Sheet plywood cannot be made to take a compound curve, and hence some models are rather crude hydrodynamically, but this is unimportant if high speed is not required. If a top-grade *marine* plywood sheet is used (not plywood of "exterior" grade as used in buildings), the quality of the hull depends almost entirely upon the workmanship of the manufacturer. Evidence of good workmanship includes the use of brass or bronze rather than galvanized fastenings and fittings, close tolerances and good finish at all joints, and adequate structural support in the form of thwarts, breast hooks, etc. The sheet-plywood hull requires no calking but it

must be painted, and painting even if done conscientiously may not prevent checking of the horizontal surfaces of the exterior ply. Such checking impairs appearance rather than seaworthiness, however. Sheet plywood is light enough for car-top use.

Molded plywood. Unlike sheet plywood, the molded product can be formed to any curve that is hydrodynamically desirable, and consequently it is used largely in high-speed and sailing hulls. Its high specific gravity makes flotation tanks or "Styrofoam" blocks desirable for buoyancy when the boat overturns, even though some models are sold without them. Unlike most sheet plywood, molded plywood is beautifully grained and is therefore usually finished with varnish. Such a finish is not only difficult to maintain (especially in salt water) but is often treacherously slippery, especially on deck surfaces. The durability of molded plywood is good, although there have been a few cases of obvious failure; these the manufacturers have seemed willing to make good, but it is wise to ask the dealer for some sort of guarantee to this effect. The molded hull is priced considerably higher than the sheet-plywood hull.

Fiber glass. The fiber- or spun-glass hull is made either by a kind of extrusion process or by the laying of successive laminations over a form. It is extremely resistant to corrosion, rot, abrasion, and similar hazards, but not to marine fouling in salt water. Most such hulls have the pigment "built into" the material and hence do not require painting, but the surface has a flat texture and hence cannot take a sparkling finish even when new. Spun glass is very heavy, requiring flotation chambers or "Styrofoam" blocks for safety when the boat overturns, and is altogether unsuited to car-top use. Some hulls of less than 18 feet are rather tubby and not very attractive. A number of sailing models, however, are excellent.

Combined constructions. A number of manufacturers have combined two construction materials in order to gain the advantages or minimize the disadvantages of each, or to reduce manufacturing costs. In some *Amesbury* skiffs, for example, lapstreak (wood planking) sides have been satisfactorily combined with a sheet-plywood bottom to reduce weight and to simplify both construction and maintenance. One rather widely used combination involves the use of one or more laminations of spun glass over sheet plywood to improve watertightness and durability without the expense or weight of all-spun-glass construction. Most such combined constructions have not been in use long enough to have proved themselves, and the manufacturers' claims for some of them are quite unrealistic. The inexperienced buyer is best advised to avoid all "revolutionary" constructions in favor of those that have been in production for at least three to five years—unless he can obtain from a responsible dealer a written guarantee of satisfaction in case of hull failure (even then there would be some risk).

Dealers, and transportation charges

Hull manufacturers have lagged far behind outboard-motor manufacturers in setting standards for franchised dealers and in establishing dealerships throughout the country. A good many hull dealers regard their dealerships as minor sidelines, carry too limited an inventory to be able to offer the customer any substantial saving on transportation charges, and are too inexperienced themselves to be able to advise the buyer intelligently on the matching of hull and motor or on other technical matters. Nevertheless, ordering through a dealer provides some assurance of delivery date, an opportunity to inspect the hull (or a similar hull made by the same manufacturer) before buying, and some guarantee against hull failure.

Many manufacturers who do not have extensive dealerships will fill orders direct, but delivery dates have in the past been very uncertain and seem likely to continue so, at least in the spring and summer. Transportation charges by either rail or truck are very high, and most manufacturers charge the customer a substantial amount for crating or packing for shipment by common carrier. For this reason, no boat can be regarded as a wise choice everywhere in the country. A Maine-built boat, no matter how excellent, may prove prohibitively expensive to a California buyer, who would have to pay very high transportation costs.

The listings

As the discussion above has indicated, no boat can be "best" for all users in all parts of the country. Within very broad limits, suitability of design is likely to be more important in determining buyer satisfaction than quality differences among a number of hulls of the same design. The listings below, therefore, do not indicate relative quality among a number of products. Rather, they are intended to identify a number of hull designs produced in a variety of materials, and generally available in various

parts of the country. We believe that the buyer who chooses his hull design and construction material wisely is likely to get satisfactory service from any of the hulls listed here. All prices are f.o.b. factory.

Fishing craft

FOR CAR-TOP TRANSPORT

Penn Yan Standard Cartop, Model WXH (Penn Yan Boats, Inc., Penn Yan, N.Y.) $212. Length, 12 ft.; weight, 67 lb. Canoe-type construction, except that plastic is used instead of canvas. Outboard motor used should not exceed 5 hp. **2**

FOR TRAILER TRANSPORT

Dunphy Trout (Dunphy Boat Corp., Oshkosh, Wis.) $321; salt-water fastenings, $10 extra. Length, 13 ft. 8 in.; weight, 165 lb. Molded-plywood construction. Size of outboard motor used should not exceed 20 hp. **2**

NON-PORTABLE

Amesbury Skiffs (A. Parsell, Seaview Ave., Bridgeport, Conn.) Length, 12 to 16 ft. The *Amesbury* boats are well made, but rather roughly finished. They offer a great deal of seaworthiness and spaciousness at low prices to those living close enough to obtain low-cost delivery. **1**

B.B. Bait-Caster (Beetle Boat Co., Inc., New Bedford, Mass.) $695.95. Length, 14 ft. 2 in.; weight, 490 lb. Molded *Fiberglas* construction. The hull is exceptionally deep and roomy. Adapted to outboard motors up to 40 hp. **3**

B.B. Sportsman (Beetle Boat Co., Inc.) $762.85. Same as *Bait-Caster* except for different seating arrangement. **3**

B.B. Aristocrat (Beetle Boat Co., Inc.) $799.90. Same as *Sportsman* except has center deck and two dashboards. **3**

High-speed craft

FOR TRAILER TRANSPORT

Lone Star Commander (Lone Star Boat Mfg. Co., Inc., Grand Prairie, Texas, and Bremen, Ind.) $298. Length, 14 ft.; weight, 165 lb. Aluminum construction. Adapted to outboard motors up to 25 hp. **1**

Penn Yan Swift, Model CTT (Penn Yan Boats, Inc., Penn Yan, N. Y.) $364. Length, 10 ft.; weight, 149 lb. Construction is similar to that of *Penn Yan Standard Cartop*, except generally heavier. Adapted to outboard motors up to 12 hp. **2**

General purpose craft

FOR CAR-TOP TRANSPORT

Duratech Pramline, Model 93 (Duratech Mfg., Corp., Pleasantville, N. Y.) $179. Length, 9 ft.; weight, 53 lb. Aluminum construction. A useful boat, but limited in passenger capacity. Although manufacturer recommends 6 hp., we believe that size of outboard motor used should not exceed 3 hp. **1**

Rye Pram (Rye Boat Co., Rye, N. Y.) $99.95 unpainted, $155 painted. Length, 8 ft.; weight, 65 lb. Considered one of the best designed and most carefully finished sheet-plywood hulls. Also available in a sailing model. **1**

NON-PORTABLE

Amesbury Skiff (see listing under "Fishing craft").

Thompson Sea Skiff (Thompson Bros. Boat Mfg., Co., Peshtigo, Wis., and Cortland, N. Y.) $495. Length, 14 ft.; weight, 310 lb. Lapstreak construction fastened with brass screws and bolts; models with copper clout nails (less desirable) at $35 less. Adapted to outboard motor up to 40 hp. **2**

Cape Cod Stormy Petrel (Cape Cod Shipbuilding Co., Wareham, Mass.) $585. Length, 15 ft.; weight, 265 lb. *Fiberglas* construction. Adapted to outboard motor from 10 to 25 hp. **3**

Off the Editor's Chest

(Continued from page 2)

The Buffalo Better Business Bureau, for example, not long ago related how two firms used high pressure sales techniques to sell overpriced inferior quality sewing machines from door to door with the aid of attractively printed "20-year guarantees." When the firms went out of business, it was discovered that no provision had been made to back up the 20-year guarantees, and the consumers who had bought those particular sewing machines were unable even to obtain parts or service.

Then there was the *Span-O-Life* automobile battery marketed with a "life-time guarantee," through national advertising. But the National Better Business Bureau reported that its letter of inquiry to the corporation was returned by the post office marked "out of business" and the Bureau was unable to find out what arrangements, if any, the company was making for the honoring of the many "guarantees" outstanding.

It is well for consumers to keep in mind that repairs and replacement of parts are not free.

Somebody has to pay for them. The cost of supporting warranties by parts and service is therefore calculated—must be so calculated by responsible manufacturers—as a factor in the retail price of an item. In fact, at one time the cost of a one-year or longer warranty on certain items was set up as a separate factor in a manufacturer's bill to the retailer. As competition became intense, the dealer might decide to do without the warranty and cut the price to the consumer by the amount it cost him to provide guaranteed service and replacement parts. One large manufacturer endeavored to set up warranty charges as a separate fund and claimed exemption from federal excise taxes on the part of the selling price of the appliance that corresponded to the cost of making good on the warranty.

The guarantee or warranty is a kind of bet that the appliance will be a perfect product of the mass assembly-line technique. During a day's run of the production line, there will be a steady stream of appliances worked over by many busy hands. If the hands are not steady or the attention wanders for a moment, there may be a slip-up in the proper placing or finish of some tiny part or an incomplete soldering of a small wire. Although the best manufacturers maintain a careful inspection on a random check basis at various points in the assembly line, there is bound to be an occasional human failure to catch each and every defect. Some of these may result in serious trouble in the finished product when it is put into service by the purchaser. It is to protect the consumer from the costly results of just this sort of unavoidable slip or omission that the guarantee was devised. If the product is good and well controlled in manufacture, the maker has the odds heavily in his favor. If the appliance is badly designed and poorly controlled in the making, the odds may be such that the factory will go bankrupt trying to make good on thousands of customers' claims for service. This has happened at least once, with major home appliances.

Of increasing importance to consumers are the guarantees and warranties that accompany major household appliances like room air conditioners, automatic washers and automatic dryers, and automobiles. Most manufacturers of major appliances offer a one-year guarantee that any defective part will be replaced within that time without charge for the part. Sealed-in units in refrigerators, freezers, and air conditioners usually carry an additional warranty of four years guaranteeing replacement at no charge if they fail. But what does "no charge" mean, exactly? *Read the warranty carefully.* The chances are you may discover that the manufacturer promises to supply the unit but you must pay for the serviceman's time in taking the old unit out and installing the new one—and that can cost a lot of money. Sometimes there is a little phrase "free. . .f.o.b. factory" that means a freight or express bill as well as a charge for haulage from the nearest freight station to your home.

You don't really need to be a Philadelphia lawyer to figure out just what various guarantees and warranties for the many items in your household mean when it comes time to collect on them. It would, however, be a good idea for you to assemble them all in one place and read them carefully so that you have some idea of what they mean and what the customary terms are. Then the next time you are trying to make up your mind which of two or three makes of appliances to buy, try comparing the terms of the warranties, in addition to comparing their other properties and dimensions, and performance as determined by CR's tests. It may be that one offers you not only replacement free of charge but makes no charge for the service of installing the defective part as well. That could be a deciding factor when two or three appliances are otherwise close together in desirability and expected performance.

The business of making good on a guarantee can be expensive to a manufacturer or distributor, and it is well to remember that the purchaser actually pays for it in some form or other. If, however, you are buying from a discount house, you may not be given a long-term warranty such as the 4-year warranty on sealed-in mechanisms, and the price you pay for the appliance will be lower by the amount customarily charged for such a guarantee. In that case you are taking a chance on having no trouble with the appliance during the warranty period. It is true that the products of the better manufacturers are carefully inspected and most of them will probably give satisfactory service, particularly during a short guarantee period of, say, one year that applies to most home appliances. If you want to take a chance, there is no reason why you should not in effect gamble in the form of a price reduction that you are getting a perfect product, but you should realize that you are making a bet and not be surprised when a local serviceman charges for a repair if something should go wrong. After all, there is no reason why he should donate his time to take care of a bet you made with the manufacturer, that didn't pay off.

A new test of transistor hearing aids

TRANSISTOR hearing aids have been improved in several ways since CR's last test, reported in the May 1955 BULLETIN. Noteworthy among the improvements is the reduction of the extra "background noise" or hiss that was often a disturbing feature of the transistor aids. Improvements in design and finish of the cases and improved microphone cushioning have slightly reduced the annoying clothing-rub noise. All of the aids in the present test had transistor and circuit noise reduced to a considerable degree.

Advertising claims of the power of hearing aids may be confusing. The effective power of a hearing aid is dependent upon two factors, acoustic gain and acoustic output. The latter will show a higher numerical figure, but the gain figure is equally important. Acoustic output is the highest level of sound which will come out of the receiver of an aid. This sound level is measured in decibels (or db.). An acoustic output of 120 decibels with no other conditions given is a figure that does not properly define the effective power of the aid.

The sound level of the average conversational speech is about 60 decibels. Thus, if a hearing aid is advertised to have 120 decibels acoustical output, there is no indication of what level of sound is needed to produce this output. If perchance the acoustic gain of the aid is only 40 decibels, the level of sound needed to *produce* the rated output would be 80 decibels or a much louder-than-average voice. Most aids, however, will not be used at their maximum power; indeed, some are useless at this point because of extreme distortion of the sounds amplified. If distortion is high, the sound will be so unpleasant in quality and poor in intelligibility that an aid which has otherwise sufficient power will be quite unsatisfactory to the user. Among the aids included in this report, the *Acousticon A-210* and *A-225* were found to have serious distortion. Once a person's hearing loss has been determined by an audiometer test, a hearing aid can be selected which has sufficient gain and delivers its sound output with low distortion.

The frequency range of most of the hearing aids tested covered the speech frequencies adequately, but many exhibited sharp peaks or exaggerations of response at various frequencies in this range (see pages 10 and 11 of the May 1955 CR BULLETIN). For example, if an aid has a peak at 1000 cycles, as some do, the second C above middle C on the piano would sound relatively louder than other notes near by. Overemphasizing certain sounds causes annoyance to the wearer. An aid with these overemphasized tones or output peaks will give the illusion of higher power output. With such an aid, a high squeal produced by feedback when the receiver is brought near the microphone is more likely to occur. Some uninformed hearing aid dealers utilize this acoustic feedback squeal for a quick evaluation of the power of a hearing aid. Actually aids with a minimum of peak responses will exhibit this squeal to a much smaller degree than aids with an uneven response, and one or more sharp peaks.

Sharp peaks also have the disadvantage that the user must reduce the output volume of the hearing aid to prevent acoustic feedback caused by loose fitting earpieces or by wearing the aid too close to the earpiece. This reduction of volume may be necessary to the point where the gain and thus the output is insufficient to compensate for the hearing loss. Hence, a minimum number of sharp peaks and a low amplitude of any peaks which do exist is of paramount importance to the user.

The aids listed were judged suitable for various degrees of hearing loss by virtue of their acoustic gains (slight loss, up to 40 db.; medium loss, 40 db. to 60 db.; severe loss, over 60 db.).

The battery drain may not be a true indication of cost of operation of the hearing aids, since certain aids, e.g., *Zenith Royal M*, *Regent*, and *Crusader*, use batteries that cost 12½ cents each; the *Sonotone 1200* uses a battery that costs $1.35. Since CR has not made any tests on hearing aid batteries to determine their useful life, figures for cost per hour are not available at this time. We advise users, before deciding on a make, to ask the dealer to give a written, signed guarantee that battery cost will not exceed a stated number of dollars per month.

A. Recommended

Zenith 50X (Zenith Radio Corp., 5801 W. Dickens Ave., Chicago 39) $50. Considered suitable for slight and medium hearing loss. Frequency response, good. No tone control or telephone pickup coil. Has reversible spring-wire holding-clasp (reversibility improves the adaptability of the aid to various mounting locations on the clothing). Medium battery drain. 1

Audivox "Micronette" (Audivox, Inc., 123 Worcester St., Boston 18) $210. Considered suitable for

Data on 15 transistor hearing aids

Make and model	Size in inches, depth x length x width	Battery voltage	Weight with battery*, oz.	Average current used (battery, drain), milli-amperes	Acoustic gain	Tone control†	Built-in telephone pickup
Acousticon A-5000	.7 x 2.5 x 1.8	1.25	2.0	2.3	med.	none	no
A-225	.8 x 3 x 1.8	2.5		2.0	med.	external 2-position	yes
A-210	1.5 x 2.5 x 1.3	1.25	1.5	3.0	med.	external 2-position	no
Audivox "Micronette"	.6 x 1.8 x 1.3	1.25	1.0	1.8	med.	none	no
Maico Transist-Ear V	.6 x 2.4 x 1.5	1.25	1.0	4.25	med.	none	no
W	.8 x 2.5 x 1.8	1.25	2.5	2.5	low	none	yes
Sonotone 100	.4 x 2.1 x 1.6	1.25	1.25	2.4	low	none	no
1200	.8 x 3.3 x 2	3.75	5.5	5.8	med.	external 2-position	yes
Telex 17	.6 x 3.5 x 1.9	2.5	4.3	2.0	med.	screwdriver adjustment on back	yes
Eyeglass Aid	.5 x 2 x .7	1.25	0.75	1.5	very low	none	no
Zenith Crusader	.6 x 2 x 1.4	1.5	1.0	5.3	med.	external 4-position	no
50X	.6 x 2.6 x 1.8	1.25	2.0	4.5	med.	none	no
75X	.6 x 2.2 x 1.8	1.25	2.0	3.0	med.	external	no
Royal M	.6 x 2.6 x 2.8	1.5	2.0	4.0	med.	external 4-position	yes
Regent	.7 x 3.2 x 1.8	3.0	2.5	5.0	high	external 4-position	no

*Receiver and cord add about 1/3 oz. to the weights.
†Tone can be varied by using one of a variety of receivers combined with plastic tubular inserts.

slight and medium hearing loss. Frequency response, good. No tone control or telephone pickup coil. Reversible spring-wire holding-clasp. Low battery drain. **3**

Sonotone 100 (Sonotone Corp., Elmsford, N. Y.) $260. Considered suitable for slight hearing loss. Frequency response, good. Output distortion, above average. No tone control or pickup coil. Reversible spring-wire holding-clasp. Medium battery drain. **3**

B. Intermediate

Acousticon A-5000 (Dictograph Products, Inc., Jamaica 35, N.Y.) $50. Considered suitable for slight and medium hearing loss. Frequency response, poor. No tone control or pickup coil. Has non-reversible spring-wire holding-clasp. Low battery drain. **1**

Telex Eyeglass Aid (Telex, Inc., Telex Park, St. Paul 1) $99. The receiver in this aid is built within the case, and a short plastic tube is employed for transmitting the sound from the receiver to the ear. The aid is attached to the eyeglass frame behind the ear by a tubular plastic extension section which is part of the hearing-aid case. Considered suitable for very slight hearing loss only; acoustical gain and

output, lowest of all aids tested. Fair frequency response, but output has pronounced peaks and dips. No tone control or pickup coil. Low battery drain. **1**

Zenith 75X (Zenith Radio Corp.) $75. Considered suitable for slight and medium hearing loss. Frequency response, good, but output exhibited several peaks. Tone control, but no pickup coil. Reversible spring-wire holding-clasp. Medium battery drain. **1**

Zenith Crusader (Zenith Radio Corp.) $135. Considered suitable for slight and medium hearing loss. Frequency response, fair, and output exhibited several peaks. Output distortion, less than average. Has tone control, but no telephone pickup coil. Has reversible spring-wire holding-clasp. High battery drain. **2**

Zenith Regent (Zenith Radio Corp.) $150. Considered suitable for slight, medium, and severe hearing loss (highest acoustical output of all aids tested). Frequency response, good, but output exhibits several sharp peaks. Output distortion, above average. Has tone control, but no telephone pickup coil. Spring-wire holding-clasp. Medium battery drain. **2**

Zenith Royal M (Zenith Radio Corp.) $100. Considered suitable for slight and medium hearing loss. Frequency response, good, but output exhibits several peaks. Output distortion, above average. Has tone control and telephone pickup coil. Has spring-wire holding-clasp. Medium battery drain. **2**

Maico Transist-Ear V (Maico Co., Inc., 21 N. Third St., Minneapolis 1) $290. Considered suitable for slight and medium hearing loss. Frequency response, fair. Output distortion, above average. No tone control or telephone pickup coil. Has narrow flat holding-clasp. Medium battery drain. **3**

Maico, Model W (Maico Co., Inc.) $290. Considered suitable for slight hearing loss. Frequency response, good. (The output of this aid exhibits a peak at 1000 cycles.) No tone control, but has pickup coil. Two flat prongs for holding-clasp. Medium battery drain. **3**

Sonotone 1200 (Sonotone Corp.) $279. Considered suitable for slight and medium hearing loss. Frequency response, fair. Has tone control and telephone pickup coil. Has reversible spring-wire holding-clasp. High battery drain. **3**

Telex 17 (Telex, Inc.) $279. Considered suitable for slight and medium hearing loss (aid tested with 2.5-volt battery; might be suitable for severe hearing loss if 5.2-volt battery was used). Frequency response, fair. Tone control adjusted by screwdriver. No pickup coil. Flat holding-clasp. Low battery drain. **3**

C. Not Recommended

Acousticon A-225 (Dictograph Products, Inc.) $249. Considered suitable for slight and medium hearing loss. Frequency response, good, but output exhibited several sharp peaks. This aid and the *Acousticon A-210* had greater output distortion than any of the other aids tested. Has tone control and telephone pickup coil. Flat holding-clasp. Low battery drain. **3**

Acousticon A-210 (Dictograph Products, Inc.) $249. Considered suitable for slight and medium hearing loss. Frequency response, good. High output distortion (see *Acousticon A-225*). Tone control, but no pickup coil. Flat holding-clasp. Medium battery drain. **3**

* * *

The following hearing aids were reported on in the May 1955 BULLETIN.

A. Recommended

Audivox 71; Audivox 71-125T; Beltone AL; Beltone C; Otarion D-1; Otarion D-7; Paravox R; Paravox S; Paravox SH.

B. Intermediate

Acousticon A-340; Otarion C-15; Paravox RH; Radio-ear 830; Telex 600; Zenith Royal T; Zenith Super Royal T; Zenith Ultra Royal T.

Brief Index of Previous 1956 Consumers' Research Bulletins

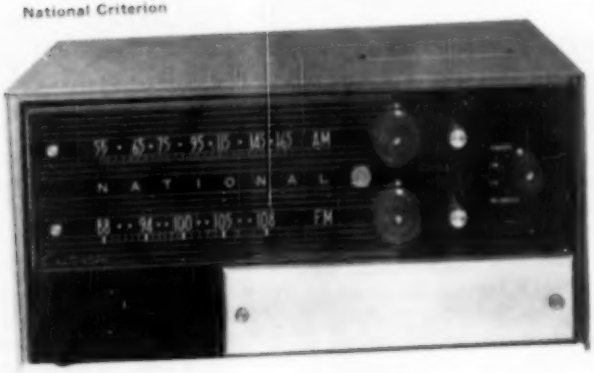
†*indicates that listings of names or brands are included.*

Radio tuners AM-FM, FM

REL Precedent

Scott 310

National Criterion



AN FM tuner can generally be placed in one of three broad classifications. In the first are included tuners, such as the *Heathkit FM-2* (a kit) and the *Knight 727*, designed to give the listener satisfactory FM reception on powerful local or near-by stations. Many compromises are made to produce an FM tuner at a low price. In the middle group will be found those tuners, such as the *Browning L-300* and the *Pilotuner FM607*, likely to be purchased by the high-fidelity enthusiast who is willing to make some concessions to convenience and quality and yet expects to obtain good sensitivity and performance, first-class fidelity, and dependable operation. In the top or third group will be found those tuners on which no effort is spared to produce the most desirable combination of characteristics.

The primary purpose of an FM tuner is to furnish a radio source of wide-range musical reproduction of the best possible quality in the home. The quality of reproduction from a tuner —at best—can only be as good as that broadcast by the FM station to which it is tuned. While a few FM stations offer broadcasts of high audio quality, a large number merely broadcast simultaneously the programs that they send out on AM, and do not provide the exceptional sound quality and wide frequency range possible for FM. Thus, before deciding upon the kind of tuner to purchase, you should ascertain from neighbors or friends in your locality who might be in a position to know whether high-quality top-fidelity programs are available that would make it worth your while to invest in really first-rate means for FM reception. If you live in or near a city and programs are mostly of local origin, you will gain little by purchasing a highly sensitive and expensive tuner. Conversely, if you are in a suburban or rural

area, you may want to buy one of the better tuners, may even find it a necessity. If you live in an area which is far distant from FM stations, you will need a tuner having maximum sensitivity. Tuners for this use are likely to be found only in the second and third groups. For the very best FM tuners you may have to pay from $150 to $325 or more.

The three tuners included in the listings were all top quality and represented efforts on the part of the respective manufacturers to provide a combination of the most desirable characteristics. Automatic frequency control, for example, which is really necessary on many tuners, was not needed. Interstation "hiss" was absent on the *Scott* and *National* tuners because of the inclusion of a squelch or suppressor circuit. The *REL* and *Scott* were equipped with meters for proper tuning (desirable feature). However, tuning any one of the three tuners reported here was so easy that the meter was not considered necessary.

Terms found in FM tuner specifications

The audio enthusiast will be at a considerable disadvantage if he doesn't understand the meaning and relative importance of terms used in describing performance of FM tuners. Each tuner will contain a tuned-radio-frequency stage, which amplifies the signal from the broadcast station and sends it on to an oscillator and mixer stage, thence to an intermediate frequency (i.f.) amplifier in which the signal is further amplified. The unwanted noises, such as those due to static and ignition, are removed in the limiter or detector section. In the detector, the desired audio signal is separated from the carrier signal, and sent on to the output stage for delivery to a separate audio amplifier.

Sensitivity is dependent upon the action of all the stages and is normally expressed as so many microvolts of signal for so many decibels of quieting. The smaller the number of microvolts, the more sensitive the tuner. Thus, a superior tuner might have a sensitivity of 1 microvolt for 20 decibels of quieting.

Selectivity is a measure of the ability of the set to receive a particular station without interference from others, and is mainly dependent upon the design of the i.f. amplifier.

Drift, which usually occurs in the oscillator, measures the failure of a tuner to stay accurately tuned to a station for a reasonably long period of time. Many tuners employ what is called *automatic frequency control* (a.f.c.) to keep the set from drifting off tuning. On the best tuners a.f.c. is not needed simply because they are so carefully designed that they do not "drift." *Automatic gain control* (a.g.c.) functions merely to maintain the output strength of all signals at a reasonably constant level. It is a desirable feature.

Of the tuners included in this report, the *REL Precedent* would be the choice, if cost is not an important consideration. The *Scott 310*, however, offers a lot in performance, comparatively, even at its far lower price of $150 (still a high price as tuners go). The *Fisher 50-R AM-FM Tuner*, reported in the 1953-54 *Annual Bulletin*, is a fine tuner and quite comparable with the *National Criterion* unless you are one of the very few who would want the advantage the *National* has of being usable for binaural-listening.

A. Recommended

REL Precedent FM Tuner (Radio Engineering Labs., 36-40 37 St., Long Island City 1, N.Y.) $325, less cabinet. A basic FM tuner which likely represents the highest state of the art of FM tuner design at this time. The cabinet is large, 8 in. high x 17 in. wide x 13½ in. deep. 18 tubes including rectifier (plus 8 crystal diodes) are employed. Tuning and radio-frequency gain controls as well as combined volume-on-off control are at the front of the set. Separate meters are used to indicate signal strength and correct tuning position.

FM: T.r.f. stage (cascode). Sensitivity, 0.85 microvolts for 20 db. of quieting. Frequency response, adequate. I.f. bandwidth, approximately 200 kc., adequate. In listening tests, comparisons between the *REL*, the *Scott 310*, and the *National Criterion*, only slight differences were noted, and these were possibly attributable only to the slight differences in the de-emphasis characteristics (hence unimportant from the consumer's standpoint). Drift was negligible. When compared with several much less expensive tuners in the under-$90 class, the *REL* gave much better bass response and a smoother audio quality. One criticism of the *REL*, attributable to its unapproached sensitivity characteristics, is the presence of spurious responses which were found even when the r.f. control was put at its minimum setting. These may be numerous enough to be troublesome in some locations, particularly in cities where several FM stations may be located; we judge they may be one of the disadvantages associated with exceptionally high sensitivity.

Scott, Model 310 Broadcast Monitor Tuner (H. H. Scott, Inc., 385 Putnam Ave., Cambridge 39, Mass.) $150. A basic FM tuner complete with cabinet. Cabinet size, 4½ in. high x 13 in. wide x 10¼ in. deep. 10 tubes including rectifier plus 3 crystal diodes. Controls at front: coarse and fine tuning, noise (hiss) suppressor, and an output level control. A tuning meter is also included.

FM: T.r.f. stage (cascode). Sensitivity, 1.7 microvolts for 20 db. of quieting. Frequency response, adequate. I.f. bandwidth, approximately 150 kc., adequate.

Stability was very good, and dial calibration sufficiently accurate to enable one to preset the tuning dial to a desired frequency, turn up the volume, and hear the wanted station. The burst of noise heard when tuning in a station with the volume control advanced was annoying.

* * *

National Criterion (National Co., Inc., 61 Sherman St., Malden 48, Mass.) $170. A basic AM-FM tuner complete with cabinet. The AM-FM sections may be used independently, or simultaneously for binaural listening. Provision is made for inclusion of a separate plug-in preamplifier if desired. Unquestionably a very flexible design. Cabinet size, 7 in. high x 16¾ in. wide x 11½ in. deep. 15 tubes including rectifier. Cathode follower output on both AM and FM. Controls on front: AM tuning; FM tuning; selector for AM, FM, binaural, and FM multiplex; and separate volume controls for AM (with on-off) and FM.

FM: T.r.f. stage (cascode). Sensitivity, 3.5 microvolts for 20 db. of quieting. Frequency response, adequate. I.f. bandwidth, 180 kc., ample. Tuner was very stable, no drift, no a.f.c. used and none needed. Accuracy of dial calibration, poor, but tuning was very satisfactory owing to the action of a circuit (squelch) which removes interstation hiss.

AM: T.r.f. stage. Sensitivity, adequate. Quality, generally good. A filter that could be used, when desired, to remove the 10 kc. whistle frequency would be a desirable addition.

The judgments in the foregoing article are based, by permission, on reports of the Audio League (Box 55, Pleasantville, N.Y.), an organization of highly expert audio and electronic engineers whose competence and freedom from bias are well known to Consumers' Research.

An important development in loud-speakers

FOR many years, sound engineers have generally conceded that the size of a loud-speaker baffle gives a rough indication of the speaker's capability in handling the sonorous low tones of the orchestra, piano, and organ. Audiophiles went progressively from a large bass-reflex cabinet to a still larger (10-20 cubic feet) infinite baffle (closed chamber), and then finally to horn loading in order to improve the bass response of their system. A true horn of the necessary large size cannot be effectively employed in the home, but the *Klipschorn*, which utilized the adjacent side walls of the room as part of the horn, was a close approach and was generally considered the best system available, for those who could afford its high price.

About two years ago, Acoustic Research, Inc., demonstrated a new type of loud-speaker, their *Model AR-1*. This speaker system, although it used only a 1.7 cubic foot (inside volume) baffle (14 x 11⅜ x 25 inches outside), employed a specially constructed low-frequency speaker (woofer) to attain phenomenal results in reproduction of sound. The quality of the output of this system was found to be outstanding. Indeed, reproduction was so smooth and distortion-free that music sounded very different through the *AR-1;* it added to and subtracted little from the program material delivered to it. The low-frequency response of the *AR-1* is unsurpassed among speaker systems adapted by size and layout for use in the home. It is very good at the high-frequency end, too, but some may feel that a system such as the *Bozak B310* is slightly to be preferred. The *AR-1* has the disadvantage to some that it presents a narrow rather than a broad source of sound.

The *AR-1* is very inefficient in translating electrical into acoustic energy; this will handicap it somewhat when it is used with amplifiers of low power. Its efficiency is only about one percent, or about 1/10 that of a well-designed bass reflex, and many who wish to get the best possible performance from it will prefer to use it with at least a 30-watt amplifier to obtain the high listening levels ("full orchestra volume") some prefer. (The *AR-1* will, however, work quite satisfactorily with an amplifier that delivers a full 10 watts over the whole audio range.)

A. Recommended

Acoustic Research AR-1 Speaker System (Acoustic Research, Inc., 23 Mt. Auburn St., Cambridge 38, Mass.) $185 complete, with specially designed woofer, tweeter, and finished cabinet; $172 in unfinished cabinet. One of the finest loud-speaker systems tested to date. Certainly a best buy. **AA2**

The above brief report on the *AR-1* is a condensation, by permission, of a report on that speaker which appeared in the January 1956 issue of the Audio League Report (Box 55, Pleasantville, N.Y.).

Tubeless tires raise important problems

Tubeless tires, which were first put on the market in 1948 but did not become standard equipment on most American cars until the 1955 models, have been received by the motoring public with mixed reactions. Some car owners say they have had no trouble at all with tubeless tires; others have found them much less satisfactory than the conventional tire-and-tube combination. This article discusses certain troublesome and at times dangerous problems presented in the use of today's tubeless tires.

TIRE manufacturers explain that the tubeless tire is safer than the conventional kind when punctured by a nail, because there is no tube to tear so as to let the tire down fast. The air leak can only be at the nail hole, and such a leak is likely to be slow and thus give one time to come to a safe stop without disaster. The air leak may be so slow, in fact, that it may take a day or two or even longer before the tire becomes sufficiently deflated to show the characteristic bulge on its side.

Because tubeless tires can be penetrated by a nail or similar sharp object or even a number of such objects without escape of much air, it is often possible to drive several thousand miles without realizing that a tire is punctured; and in doing so one may do great damage to the tire. For this reason, car owners should examine their tires periodically, say every 2000-3000 miles, and have any nails that are found removed and the tire repaired at a qualified service station.

Unless the tire bead and valve are completely sealed, the new tires will have a tendency to leak air, and if this is not corrected, the tire pressure will be below normal most of the time—the surest way to injure a tire carcass and to wear it out prematurely.

With the new tires, the car owner is practically unable to repair a leak himself, since it is often, perhaps always, out of the question to get the deflated tire to take air from a hand pump or from any other source of pressure which delivers air slowly. Recently a man who had had the air let out of all his tires by mischievous boys was unable to get home since a hand pump which he had was completely ineffective in putting air in the tires, because of the long "leak-perimeter" at the bead. *Only fast air flow* combined with use of a special belt or band, which can be placed around the tire and tightened, will take care of the problem.

It seems ridiculous that the tire companies' engineers, spoiled perhaps by too much mechanized, commercial tire servicing, should not have thought of the possibility that someone might need to repair his own tire when he was perhaps many miles from the nearest filling station, or at a time when filling stations were closed, or inaccessible by reason of weather or other emergency conditions.

Still another disadvantage of tubeless tires is the danger that they will be manhandled in installation in such a way that the tire will be permanently damaged. *The car owner should never permit anyone to remove or mount a tubeless tire by using a hammer or even a rubber mallet, as such abuse may damage the rim-seal ridges, and result in an air leak.* Bearing in mind the wide range of intelligence and responsibility among tire service people, from good to very ordinary, one can easily see that repair and installation work can result in serious damage to one's tires or present a permanent problem, throughout their life, with constant troublesome leakage.

One experienced magazine commentator expressed his disgust with tubeless tires, which he called "gutless doughnuts" that are a disgrace to the industry and a danger at high cruising speeds. He probably had in mind an important and serious defect of tubeless tires which can cause serious damage to the car and injury to its occupants.

A Nebraska correspondent writes: Tubeless tires are dangerous when skidding sideways on a rutty country gravel or dirt road. A 1955 car here was completely wrecked when it struck a rough spot in a road, started skidding sideways. The right rear tire hit a rut, pulled the bead off, let the air out of the tire, and the car rolled over twice. The driver swore he would not have upset if the bead had not rolled off the rim. Insurance adjusters are said to know of a number of such cases. (On examination, the tires may be found to be still sound.)

Tire engineers may find a way to solve this problem, and we surely hope they may do so soon. In the meantime, the careful driver may think it wise to afford such extra safety as he can by fitting his tubeless tires with tubes.

Ratings of Motion Pictures

THIS section aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines—some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

Boxoffice, Cue, Daily News (N. Y.), *The Exhibitor, Films in Review, Harrison's Reports, Joint Estimates of Current Motion Pictures, Motion Picture Herald, National Legion of Decency, Newsweek, New York Herald Tribune, New York Times, The New Yorker, Parents' Magazine, Release of the D. A. R. Preview Committee, Reviews and Ratings* by the Protestant Motion Picture Council, *The Tablet, Time, Variety* (weekly).

The figures preceding the title of the picture indicate the number of critics whose judgments of its entertainment values warrant a rating of A (recommended), B (intermediate), or C (not recommended).

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure
biog—biography
c—in color (Ansco, Eastman, Technicolor, Trucolor, Warner Color, etc.)
car—cartoon
com—comedy
cri—crime and capture of criminals
doc—documentary
dr—drama
fan—fantasy
hist—founded on historical incident
mel—melodrama
mus—musical
mys—mystery
nov—dramatization of a novel
rom—romance
sci—science fiction
soc—social-problem drama
trav—travelogue
war—dealing with the lives of people in wartime
wes—western

A	B	C		
—	5	8	**Adorable Creatures (French)**	*com A*
—	—	3	**Air Strike**	*war-dr AY*
1	3	1	**Alexander the Great**	*hist-dr-c AYC*
—	6	7	**All that Heaven Allows**	*dr-c A*
—	2	3	**Angel Who Pawned Her Harp, The (British)**	*fan A*
2	8	2	**Anything Goes**	*mus-com-c AY*
—	2	3	**Apache Woman**	*wes-c AYC*
—	6	9	**Artists and Models**	*mus-com-c A*
1	10	2	**At Gun Point**	*wes-c AYC*
—	4	3	**Backlash**	*wes-c A*
1	10	5	**Bar Sinister, The**	*dr-c A*
—	2	5	**Battle Stations**	*war-dr AY*
—	—	3	**Beast with 1,000,000 Eyes, The**	*sci A*
—	1	9	**Benguzi**	*mel AYC*
5	9	3	**Benny Goodman Story, The**	*mus-biog-c AYC*
—	—	6	**Betrayed Women**	*soc-mel A*
1	6	11	**Big Knife, The**	*dr A*
—	4	—	**Birds and the Bees, The**	*com-c AY*
—	9	5	**Blood Alley**	*war-dr-c A*
—	1	2	**Bobby Ware is Missing**	*mys-mel AYC*
—	3	1	**Bold and the Brave, The**	*war-com A*
1	5	9	**Bottom of the Bottle, The**	*mel-c A*
—	—	3	**Brain Machine, The (British)**	*cri-mel A*
—	2	3	**Broken Star, The**	*wes A*
6	7	1	**Carousel**	*mus-dr-c A*
—	2	6	**Cash on Delivery (British)**	*com A*
—	—	5	**City of Shadows**	*cri-mel A*
—	5	—	**Cockleshell Heroes (British)**	*war-dr-c AY*
—	5	1	**Comanche**	*hist-dr-c AY*
—	9	1	**Come Next Spring**	*dr-c AY*
—	1	3	**Come On, The**	*cri-mel A*
1	3	2	**Conqueror, The**	*adv-c A*
—	5	6	**Count Three and Pray**	*dr-c A*
3	14	1	**Court Jester, The**	*com-c AYC*
6	9	1	**Court Martial of Billy Mitchell, The**	*biog-c AYC*
—	3	2	**Creature Walks Among Us, The**	*sci A*
—	1	4	**Crime Against Joe**	*cri-mel A*
1	3	6	**Crooked Web, The**	*cri-mel A*
—	—	3	**Cross Channel (British)**	*mel AY*
—	2	4	**Dance Little Lady (British)**	*dr-c A*
—	1	3	**Dark River (Argentine)**	*dr A*
—	1	4	**Day the World Ended**	*sci A*
—	10	7	**Deep Blue Sea, The (British)**	*dr-c A*
4	12	2	**Desperate Hours**	*cri-mel A*
—	6	6	**Diabolique (French)**	*mys-mel A*
—	8	9	**Diane**	*hist-dr-c A*
—	11	4	**Doctor at Sea (British)**	*com-c A*
2	3	3	**Don Juan (Austrian)**	*mus-dr-c A*
—	—	8	**Double Jeopardy**	*cri-mel A*
—	1	2	**Dr. Knock (French)**	*com A*
—	1	6	**Duel on the Mississippi**	*mel-c A*
—	1	11	**Flame of the Islands**	*mel-c A*
2	3	5	**Footsteps in the Fog**	*cri-mel-c A*
—	6	1	**Forbidden Planet**	*sci-c A*
—	7	10	**Forever, Darling**	*com-c AYC*
—	1	7	**Fort Yuma**	*mel-c A*
—	4	5	**Frisky (Italian)**	*dr A*
—	4	5	**Fury at Gunsight Pass**	*wes AYC*
—	2	2	**Gaby**	*war-dr-c A*
—	2	11	**Gentlemen Marry Brunettes**	*mus-com-c A*
—	2	5	**Ghost Town**	*wes AYC*
—	9	8	**Girl in the Red Velvet Swing, The**	*mus-dr-c A*
—	6	2	**Glory**	*dr-c AYC*
1	6	3	**Golden Demon (Japanese)**	*dr-c A*
5	7	4	**Good Morning, Miss Dove**	*dr-c AYC*
6	6	4	**Guys and Dolls**	*mus-com-c A*
2	3	1	**Harder They Fall, The**	*mel A*
—	1	5	**Headline Hunters**	*dr AYC*
—	6	3	**Heide and Peter**	*dr-c AYC*
3	7	7	**Helen of Troy**	*hist-dr-c A*
—	5	8	**Hell on Frisco Bay**	*cri-mel-c A*
—	5	4	**Hell's Horizon**	*war-mel A*
—	3	1	**Hidden Guns**	*wes-mel-c AYC*
1	6	—	**Hill 24 Doesn't Answer (Israeli)**	*war-dr AY*
—	2	2	**His Excellency (British)**	*dr A*
—	—	6	**Hold Back Tomorrow**	*dr A*
—	5	3	**Hot Blood**	*mus-dr-c A*
—	4	1	**House of Ricordi (Italian)**	*mus-biog-c A*
—	4	6	**Houston Story, The**	*cri-mel A*
—	6	6	**I Died a Thousand Times**	*cri-mel-c A*
4	8	5	**I'll Cry Tomorrow**	*mus-biog A*
—	5	8	**Illegal**	*cri-mel A*
—	9	6	**Indian Fighter, The**	*mel-c A*
—	3	8	**Inside Detroit**	*mel A*
—	4	2	**Invasion of the Body Snatchers**	*sci A*
—	—	—	**It's a Dog's World (see Bar Sinister, The)**	
4	10	4	**It's Always Fair Weather**	*mus-com-c A*
—	4	6	**Joe Macbeth**	*cri-mel A*
2	3	—	**Jubal**	*wes A*
—	3	3	**Kettles in the Ozarks, The**	*com AYC*
—	5	5	**Killer is Loose, The**	*cri-mel A*
—	1	7	**Killer's Kiss**	*mel A*
—	—	5	**King Dinosaur**	*sci AY*

A	B	C		
1	10	5	**Kismet**	*mus-com-c A*
—	1	9	**Kiss of Fire**	*adv-c A*
—	5	9	**Lady Godiva**	*dr-c A*
—	9	3	**Ladykillers, The (British)**	*com-c A*
—	3	11	**Last Frontier, The**	*wes-c A*
—	7	6	**Last Hunt, The**	*dr-c A*
—	1	2	**Last of the Desperados**	*wes AYC*
—	7	3	**Lawless Street, A**	*wes-c A*
—	1	6	**Lay that Rifle Down**	*mus-com AYC*
1	9	3	**Lease of Life (British)**	*dr-c A*
2	11	4	**Left Hand of God, The**	*war-dr-c A*
—	2	6	**Let's Make Up (British)**	*mus-fan-c A*
1	6	1	**Letters from My Windmill (French)**	*dr A*
—	8	9	**Lieutenant Wore Skirts, The**	*com-c A*
2	12	4	**Littlest Outlaw, The**	*dr-c AY*
—	11	3	**Lone Ranger, The**	*wes-c AYC*
—	—	4	**Lord of the Jungle**	*mel AYC*
2	1	1	**Lucky Kid, The (British)**	*dr-c AYC*
1	8	4	**Lucy Gallant**	*dr-c AYC*
1	2	3	**Maddalena (Italian)**	*dr-c A*
—	3	1	**Magic Fire**	*mus-biog-c A*
—	1	3	**Make Me an Offer (British)**	*dr-c A*
1	3	6	**Man Alone, A**	*wes-c A*
3	2	—	**Man in the Gray Flannel Suit, The**	*dr-c A*
7	9	1	**Man Who Never Was, The (British)**	*mys-mel-c AY*
1	8	6	**Man with the Golden Arm, The**	*soc-dr A*
1	11	4	**Man with the Gun**	*wes A*
—	1	7	**Manfish**	*cri-mel-c A*
—	1	3	**Mau Mau**	*doc-c A*
2	10	2	**Meet Me in Las Vegas**	*mus-com-c A*
—	4	2	**Miracle in the Rain**	*dr A*
—	4	—	**Mohawk**	*dr-c A*
2	11	5	**My Sister Eileen**	*mus-com-c A*
—	1	2	**Naked Night, The (Swedish)**	*dr A*
1	13	1	**Naked Sea, The**	*doc-c AYC*
1	7	2	**Never Say Goodbye**	*dr-c AYC*
1	10	1	**Night My Number Came Up, The (British)**	*war-dr A*
—	2	1	**No Man's Woman**	*mys-mel A*
8	9	2	**Oklahoma**	*mus-com-c A*
3	3	—	**On the Threshold of Space**	*sci-dr-c AYC*
—	3	—	**On the Twelfth Day**	*fan-c AYC*
—	—	4	**One Step to Eternity (French)**	*dr A*
—	1	4	**One Way Ticket to Hell**	*soc-dr A*
—	4	2	**Our Miss Brooks**	*com A*
—	1	5	**Over-Exposed**	*cri-mel A*
—	2	4	**Paris Follies of 1956**	*mus-c A*
2	7	1	**Patterns**	*dr AY*
—	—	5	**Phantom from 10,000 Leagues, The**	*sci A*
7	7	3	**Picnic**	*dr-c A*
—	4	1	**Please Murder Me**	*cri-mel A*
—	4	3	**Postmark for Danger (British)**	*mys-mel A*
—	—	4	**Price of Fear, The**	*cri-mel A*
—	11	4	**Prisoner, The (British)**	*dr A*
—	4	10	**Queen Bee**	*dr A*
1	12	2	**Quentin Durward**	*nov-c AYC*
—	1	2	**Race for Life, A (British)**	*mel A*
3	7	6	**Rains of Ranchipur, The**	*nov-c A*
4	7	5	**Ransom**	*cri-mel A*
1	9	8	**Rebel Without a Cause**	*soc-mel-c A*
—	3	—	**Rebound (British)**	*cri-mel A*
—	8	1	**Red Sundown**	*wes-c A*
—	2	3	**Return of Don Camillo, The**	*dr A*
—	6	3	**Return of Jack Slade, The**	*wes-c A*
5	4	3	**Richard III (British)**	*dr-c AY*
1	3	1	**River Changes, The**	*dr A*
—	2	1	**Riviera (Italian)**	*dr-c A*
—	6	—	**Road to Denver, The**	*wes-c AYC*
—	4	—	**Rock Around the Clock**	*mus-com A*
1	12	4	**Rose Tattoo, The**	*dr A*
—	—	5	**Royal Bed, The**	*dr-c A*
—	2	13	**Running Wild**	*soc-mel A*
1	7	2	**Samurai (Japanese)**	*dr-c A*
2	4	—	**Searchers, The**	*wes-c A*
—	10	5	**Second Greatest Sex, The**	*mus-com-c A*
3	4	2	**Serenade**	*mus-dr-c AY*
—	11	4	**Seven Cities of Gold**	*hist-dr-c AY*
—	6	7	**Shack Out on 101**	*mys-mel A*
—	1	7	**Shadow of the Eagle**	*adv-c A*
1	9	—	**Simba (British)**	*doc-dr-c A*
1	8	6	**Sincerely Yours**	*mus-dr-c AY*
—	1	2	**Singing in the Dark**	*mus-dr A*
—	—	4	**Sins of the Borgias (Italian)**	*dr-c A*
—	2	8	**Slightly Scarlet**	*cri-mel-c A*
—	6	5	**Spoilers, The**	*mel-c A*
—	9	1	**Square Jungle, The**	*mel A*
—	2	4	**Steel Jungle, The**	*soc-mel A*
—	4	5	**Storm Fear**	*mel A*
—	4	2	**Sudden Danger**	*cri-mel A*
2	7	4	**Tall Men, The**	*wes-c A*
—	6	5	**Tarantula**	*sci AY*
—	6	5	**Target Zero**	*war-dr AY*
—	3	3	**Teckman Mystery, The (British)**	*cri-mel AY*
3	12	4	**Tender Trap, The**	*com-c A*
—	7	5	**Tennessee's Partner**	*mel-c A*
—	5	4	**Texas Lady**	*mel-c AY*
1	6	9	**There's Always Tomorrow**	*dr A*
—	3	—	**They Who Dare (British)**	*war-mel A*
—	1	2	**This Man is Dangerous (French)**	*mel A*
—	4	3	**This Strange Passion (Mexican)**	*dr A*
—	—	12	**Three Bad Sisters**	*dr A*
—	5	2	**Timetable**	*mys-mel A*
—	4	4	**Too Bad She's Bad (Italian)**	*com A*
—	4	5	**Top Gun**	*wes AYC*
—	4	1	**Touch and Go (British)**	*com AYC*
—	2	4	**Toughest Man Alive, The**	*mel A*
1	10	2	**Three Stripes in the Sun**	*war-dr A*
—	3	10	**Treasure of Pancho Villa, The**	*mel-c A*
—	7	3	**Tribute to a Bad Man**	*wes-c A*
1	10	6	**Trouble With Harry, The**	*com-c A*
—	3	7	**Twinkle in God's Eye, The**	*dr AY*
—	1	2	**Two-Gun Lady**	*wes AYC*
1	5	6	**Umberto D (Italian)**	*dr A*
—	—	4	**Unmarried Mothers (Swedish)**	*soc-dr A*
—	1	4	**Uranium Boom**	*mel A*
—	5	5	**Vanishing American, The**	*wes AYC*
—	10	6	**View from Pompey's Head, The**	*dr-c A*
—	4	4	**Warriors, The**	*adv-c AYC*
—	3	4	**Will Any Gentleman? (British)**	*com A*
—	2	3	**Wiretapper**	*cri-mel A*
—	4	7	**World in My Corner, The**	*mel AYC*
—	2	2	**World Without End**	*sci-c AY*

* * *

Reissues (oldtimers you may have seen before) as previously rated in the CR Bulletin indicated:

1	5	9	**April in Paris (June '53)**	*mus-com-c A*
4	10	3	**Bend of the River (Aug. '52)**	*wes-c AYC*
4	11	1	**Broken Arrow (Jan. '51)**	*dr-c AYC*
—	7	5	**Carson City (Nov. '52)**	*wes-mel-c AYC*
4	7	5	**Cyrano de Bergerac (June '51)**	*dr A*
—	5	7	**Dakota Lil (Sept. '50)**	*mus-wes-c A*
10	4	3	**Day the Earth Stood Still (Apr. '52)**	*sci A*
1	12	3	**Guy Named Joe, A (Aug. '44)**	*war-dr A*
1	10	10	**Honky Tonk (March '42)**	*mel A*
2	8	5	**House of Strangers (Jan. '50)**	*dr A*
1	2	7	**Ivanhoe (Jan. '53)**	*nov-c AYC*
4	7	2	**Music Land (excerpts from Make Mine Music, June '46 & Melody Time, Feb. '49)**	*mus-car-c AYC*
—	10	6	**One Minute to Zero (Feb. '53)**	*war-mel A*
1	10	3	**Song of the South (July '47)**	*car-c AYC*
9	6	2	**Spellbound (June '46)**	*dr A*
4	14	—	**Stratton Story, The (Nov. '49)**	*dr AYC*
2	11	1	**Tall in the Saddle (July '45)**	*wes AYC*
—	10	7	**Thieves' Highway (Apr. '50)**	*cri-dr A*
9	6	—	**Third Man, The (July '50)**	*cri-mel A*
2	9	4	**Three Musketeers, The (May '49)**	*dr-c AY*
—	8	7	**Unconquered (June '48)**	*hist-c A*
—	10	2	**Walk A Crooked Mile (Apr. '49)**	*mel A*
7	10	—	**Yearling, The (May '47)**	*dr-c AYC*

The Consumers' Observation Post

(Continued from page 4)

WOMEN'S DRESSES WITH BUILT-IN LININGS are sometimes a headache to the dry cleaner when they cannot be finished satisfactorily because the lining shrinks. The National Institute of Drycleaning reports that the outer fabric then puckers and is unsatisfactory in appearance. Apparently there is no way of telling whether a particular dress will develop this difficulty. Consumers should look for a hang tag indicating that the fabric meets one of the American Standards for textile performance or get some assurance from the shop where they purchased a dress with a built-in lining that it may be returned for full credit if it is unsatisfactory in appearance after it is cleaned.

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WHAT KIND OF DISHES to buy, real china or earthenware, is a problem to be decided by many a newlywed. The advantages and disadvantages of true china and earthenware are set forth by Hensleigh C. Wedgwood in the Journal of Chemical Education. Mr. Wedgwood, of the famous English ceramic firm, points out that china is more expensive than earthenware, but china is tougher and will not chip as readily. All things considered, china will last longer, will not stain if chipped, and will not craze. On the other hand, earthenware is decorated with underglaze colors that are more resistant to wear and, because of its better thermal expansion properties, it is not so liable to crack. Earthenware, perhaps more properly called dinnerware, is of two types. The earthenware made in English and American potteries is usually cream in color and harder fired (with a harder glaze on the surface) than Mexican and Italian earthenware and some American-made products made from red- or buff-burning clays covered with colored glazes. The latter, of course, will chip readily and absorb water and grease in washing.

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AS THE SEASON PROGRESSES, the home gardener begins his battle with insects and pests by diligently spraying his cherished flowers and vegetables. There are many chemicals available for this purpose, some of which not only kill the bugs, but involve potential dangers to human beings who come in contact with them. In an excellent paper on the insecticide problem, by S. W. Gurney, Chairman of the Health Committee of the National Safety Council, it is suggested that great care be used in handling any one of the following trade brand products, which are considered highly toxic:

H.E.P.T., Bladan, Hexotine, Hexamite, Black Leaf -40, Systox, Demiton, Pestox, Parathion, Thiophos, Durathion Genithion, Niran, Par, Paradust, Parakill, Paraphos, Penphos, Phos-kil, Planthion, Thiondust, Vapophos, Paraerosol, T.E.P.P., Blades, Agrifume, Foxves, Killex, Hexcide, Nifos T, Tetracide, Tetratone, Tetraerosol.

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DEPRECIATION ON A NEW CAR is a technical problem difficult for the individual car owner to evaluate. An interesting point is made in a recent issue of Fleet News, pointing out that the historical depreciation rate on a car occurs regardless of the amount of use that a car is given. If, for example, a car is purchased near the end of a year, only a few months before a new model is available, it has had 8 or 9 months of depreciation in value even though it may be a brand new car. At the end of one year, it will be a model almost two years old, and at the end of two years, it will be a three-year-old model. The only way to beat the depreciation factor in such case is to operate the car for its full useful life. Fleet News notes that unless a car put into service in July or August is operated for its full life the depreciation loss will apply whenever it is traded in.

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OVENS THAT ARE SEPARATE from top-of-the-stove cooking units are coming into popularity. The advantages and disadvantages are discussed effectively in a little leaflet put out by the Small Homes Council of the University of Illinois, which makes the point that the chief advantage for the separate oven is that it can be installed at a height convenient for the homemaker to use and clean without stooping. Gas ovens should bear the seal of approval of the American Gas Association; electric ovens should be listed by the Underwriters' Laboratories, Inc. Further, the pamphlet suggests that the oven should be well insulated. (Obviously this is particularly important when the oven is installed in a wood cabinet or incorporated in a wood kitchen cabinet assembly.) All ovens should be vented and installed so that they can be easily serviced without taking the kitchen apart. It is important to make certain that heat and moisture escaping from the opened door of the oven will not mar the surface above the oven. Counter space must be provided adjacent to the oven. Sketches showing desirable and undesirable locations of separate ovens are provided in the pamphlet entitled Separate Ovens, Circular Series Index No. C5.33, which is available at 10 cents from Small Homes Council, Mumford House, University of Illinois, Urbana, Ill.

Phonograph Records

BY WALTER F. GRUENINGER

Please Note: The first symbol applies to quality of interpretation, the second to fidelity of recording.

Balakirev: *Islamey, Thamar, Russia.* Philharmonia Orchestra under von Matacic. Angel 35291. $4.98. A welcome disk of orchestral works by the composer to whom the nationalist school of Russian music owed its formation. Not great music, but highly colorful and melodic. The orchestra plays with zest and commendably conveys the spirit of the writing. Excellent recording. My pressing is off center. AA AA

Brahms: *Sonatas Nos. 1 and 2 for Cello and Piano.* Fournier and Backhaus. London LL 1264. $3.98. Two chamber masterpieces superbly played. Difficult problem of balance in the recording nearly solved, but there are times when the cello is too distant. AA A

Debussy: *La Mer* and *Nocturnes.* Boston Symphony under Monteux. RCA Victor LM 1939. $3.98. Magnificent disk! Debussy at his orchestral best and the Bostonians at theirs. If only the engineers had permitted more of an orchestral climax now and then, and more distance between the sirènes and the mikes. But it is a minor criticism. AA A

Flotow: *Martha.* Rizzieri, Carmassi, Tagliavini, Tassinari, etc., under Pradelli. 4 sides, Cetra B 1254. $9.96. The singing in this ingratiating comedy is not always effortless and some of it is definitely off pitch. No complaint with the conducting or recording. Competitive Urania URLP 217, sung in the original German, scores higher in performance, lower in fidelity. B AA

Grieg: *Peer Gynt Suites Nos. 1 and 2* & **Ippolitov-Ivanov:** *Caucasian Sketches.* Hollywood Bowl Symphony Orchestra under Slatkin. Capitol P 8329. $4.98. Sure fire compositions. While the *Sketches* are played as though the performers were tired of them, *Peer Gynt* comes through better, though it is more on surface than in depth. Fine recording. A AA

Handel: *Semele.* Vyvyan, Herbert, Prantnell, Pollak, etc., under Lewis. 6 sides, Oiseau-Lyre 50098/100. $14.94. Among Handel's finest compositions is this opera in English. Famous arias include "Oh, Sleep Why Dost Thou Leave Me" and "Where'er You Walk." Jennifer Vyvyan in the name part is outstanding. Nearly all the other soloists are exceptionally good. First-rate recording. AA AA

Haydn: *Symphonies Nos. 88 and 104.* Cleveland Orchestra under Szell. Epic LC 3196. $3.98. Rich, virile works that rank high in Haydn's symphonic output. Played with unusual attention to detail and robustly recorded. AA AA

Mozart: *Divertimento No. 17* and *Eine Kleine Nachtmusik.* Chicago Symphony Orchestra under Reiner. RCA Victor LM 1966. $3.98. Lovely pieces revealing the light side of Mozart. Reiner and his men perform with taste, care, and spirit. Recording is notably bright and good. AA AA

Planquette: *Les Cloches De Corneville.* Musy, Blanc, Giraudeau, etc., under Dervaux. 4 sides, London International TW 9114/5. $9.96. Better known in this country as "The Chimes of Normandy," an engaging operetta produced here with a first-rate French cast which is very well recorded. The conversations in French between vocal numbers are tiring when not understood. Unfortunately, no translations or synopsis of the plot are provided. AA AA

Vivaldi: *Concerti in A Major and D Minor* & **Leo:** *Concerto in D for Cello* & **Sacchini:** *Edipo a Colono Overture.* Scarlatti Orchestra under Caracciolo. Angel 35254. $4.98. Though the Vivaldi pieces stand out for their beauty, all the works are above average. Sensitive playing by unnamed violin soloist and the orchestra. The cello soloist lacks distinction. Sound is a little constricted and soft. A A

Wagner: *Parsifal.* Philadelphia Orchestra under Ormandy. Columbia ML 5080. $3.98. "Prelude," "Transformation Scene," "Good Friday Spell," etc. Spine tingling, compassionate playing, and rich recording. AA AA

A Chopin Recital. Nadas (piano). Period SPL 722. $4.98. Scherzo, Prelude, Polonaise, Nocturne, Etude, Waltz, Mazurka—in all, 15 pieces. Nadas, the Hungarian, has a tendency to *underplay*, contrary to most performers. But there's poetry and musicianship here and excellent fidelity. AA AA

British Band Classics. Eastman Symphonic Wind Ensemble under Fennell. Mercury MG 40015. $4.98. Two suites by Holst and two pieces by Vaughan Williams. Rich textured works transparently played and well recorded. AA AA

Songs from Mexico. Carmen Prietto (soprano). Westminster WN 18142. $3.98. "La Paloma Blanca," "La Golondrina," "Noche Serena," "El Perico," etc. Miss Prietto is well trained in the classic style which accounts for her clear, on pitch singing. Though agreeable, it's cold. Effective guitar accompaniment. A AA

The Moment of Truth. Spanish Air Force Military Band under de Arriba. Decca DL 9806. $4.98. Bull ring music. Exciting pasodobles, etc. Well played and satisfactorily recorded in Spain. AA A

You and the Night and the Music. Kostelanetz and His Orchestra. Columbia CL 772. $3.95. Twelve pieces ranging from "Blues in the Night" to Pierne's "Serenade." Pleasant for background. Some tricky Kostelanetz orchestral effects. AA AA

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Archive Production. Decca has marketed the Deutsche Grammophon Gesellschaft pressings of a project that should excite music students, teachers, and serious listeners. The aim of the series is to make available the wide range of music between the years 700 and about 1700. In thorough Teutonic manner, the repertoire has been divided into 12 "research periods" which have again been divided into many sections of types of works, composers, etc.

To my desk has come the second release which is the entire Bach organ works as issued on 18 Archive label disks played on the organ of the Church of St. Jakobi, Lübeck, or the Church of Cappel by the blind organist, Helmut Walcha. Some of these performances were released previously by Decca but in different couplings. This release is called: "IX. Research Period, The Works of Johann Sebastian Bach. Series F: Organ Works."

It's obvious that all Bach organ compositions are not equally meritorious. Actually, the best is most frequently heard and that leaves out many choral preludes and chorales, Orgel-Buechlein and Clavier-Uebung pieces. Obviously there will be some discriminative selection by many buyers, although educators, libraries, and students of the organ may wish to take all the disks if they have the price—$5.98 per 12-inch disk.

Walcha's playing is sound, dedicated, facile. One gets the feeling he's never showing off. Maybe he's a little short of scintillating display in the great virtuoso pieces but certainly he's far above "adequate." The recording is somewhat distant so the over-all effect is a blend of tone. Recording dates appear on each disk and the majority seem to be in the early 1950's. Performance and recording are recommended. Quiet surfaces.

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